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A Weekly Journal of Medicine and Surgery

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Original Articles.

CHRONIC CATARRHAL INFLAMMATION OF THE MIDDLE EAR.[1]

BY ALBERT H. BUCK, M.D.,

NEW YORK.

GENTLEMEN: Chronic catarrhal inflammation of the middle ear is a trite theme, and one that I have great hesitation in writing upon, for fear that when I have said all that I may have to say, you will accuse me of wasting your time with matters already perfectly familiar to you. I certainly cannot hope to throw any new light on this old subject; but, while making this confession, I am disposed to look upon the merchant's practice of periodically taking account of stock as one that we medical men may sometimes adopt to advantage. I propose, therefore, to-night to take some account of our stock of knowledge in regard to this exceedingly common aural affection, in the hope that I may succeed, here and there, in drawing your attention to points about which you have perhaps forgotten, or the value of which you may have underrated. The stand-point from which I shall judge the value or lack of value of these points will necessarily be that of my daily experience in practice. Therefore, in what I may commend and in what I may condemn, you will know that I am simply expressing personal views, which may or may not be in accord with those which are commonly accepted. I have neither the time nor the taste to wade through all the literature of the subject and present to you an impartial, and, therefore, almost necessarily colorless, *résumé* of the views held by different authorities in regard to the etiology, pathology, and therapeutics of chronic catarrhal inflammation of the middle ear. The teachings of these men have, at some time or other, exerted their legitimate influence in building up and modifying my own views. Hence, in large measure, I am, justified in speaking, as I have already done, of *our* stock of knowledge. Let us overhaul this stock and see what our possessions are to-day, and how they compare with what we possessed a few years ago.

First, with regard to the nature and characteristics of the affection. What are our conceptions to-day in regard to it, and are they any more clearly defined than they were fifteen years ago? Are we still obliged to apply the expression "chronic catarrhal inflammation of the middle ear" to pathological processes and conditions many of which are doubtless of an entirely different nature? Has a further acquaintance with the course of the disease enabled us to predict, any more accurately than before, what is likely, in any given case, to be the issue as regards both the hearing power and the persistence of some of the concomitant subjective symptoms? These questions, I fear, cannot be answered any more precisely to-day than they could fifteen years ago. Local conditions or lesions of the middle ear, entirely independent of anything worthy the name of catarrhal disease, are doubtless at times still mistaken by all of us for the latter affection. And how could it be otherwise? Are we likely ever to discover means for rendering an intact drum membrane so transparent that we may interpret correctly pathological lesions of the middle ear, which now are known to us only through post-mortem studies? And, again, if it were even possible to temporarily remove the drum membrane, should we be able to obtain a view of those vital parts of the auditory mechanism which lie outside of the range of vision of a person looking into the external auditory canal from without? I think not; and yet, despite all the difficulties which beset the study of this class of diseases, I believe that those who are reasonably familiar with affections of the ear do not often mistake other pathological middle-ear conditions or processes for that which is now under consideration.

I shall not attempt to paint the picture of a disease one of the chief characteristics of which is its almost entire lack of salient features. You are all thoroughly familiar with its symptomatology, and I may, therefore, dismiss this part of the subject from further consideration. Our conceptions of the pathology of the disease are also probably the same. There is one respect, however, in which I am disposed to believe that the views held to-day are appreciably in advance of those held twenty years ago. I refer to the relative importance assigned to the two seats of the catarrhal disease, viz., the Eustachian tube and middle ear on the one hand, and the vault of the pharynx on the other. At the earlier date almost the entire force of our therapeutic energies was concentrated upon the Eustachian tube and middle ear, while the vastly larger tract of mucous membrane at the vault of the pharynx received comparatively little attention. And yet, even among the earlier authorities, there were some—Von Troeltsch, for example—who laid stress upon this point. Nevertheless, I believe that I am correct in the statement that it was not a general belief. At the present time there are few, I imagine, who do not look upon the pharyngeal centre of the disease as by far the more important of the two, and that unless we can successfully treat the larger area it is comparatively useless to bring therapeutic agents to bear upon the smaller one. Personally, I am disposed to state the case even more strongly. I believe that in a very large proportion of the cases treatment directed to the vault of the pharynx is all that is required in the way of local interference; or, to put the statement in somewhat different terms, that the application of remedies to the vault of the pharynx *alone* will, in a large proportion of cases, effect a greater amount of improvement in the condition of the middle ear and Eustachian tube than can be effected by applications made directly to these parts.

We come, next, to the consideration of the causes of this disease. How stands our knowledge with regard to these? Have we made any progress during recent years in fathoming this mystery? So far as the intrinsic causes are concerned, we still possess only very few, and these often contradictory, facts. In some cases the tendency to catarrhal inflammation of the pharyngeal and neighboring mucous membranes appears to have been handed down from parents to children, and we speak of the disease as having been inherited. Just as often, however, do we fail to trace the origin of the disease to any such influence. If our knowledge of the direct causes, however, is no more precise now than it was years ago, we have, I believe, gained clearer conceptions of the factors which promote a continuance and an undue activity of the catarrhal process. Not only do we appreciate thoroughly how cold may disturb the delicate balance maintained between the functional activity of the skin and the state

[1] Read before the Ophthalmological and Otological Section of the Academy of Medicine, December 20, 1886.

of the blood-vessels and glandular structures of the pharyngeal mucous membrane, but we have learned that a similar interdependence exists between the condition of the latter region and the activity of the metabolic processes (those of assimilation and destructive metamorphosis). In other words, we have learned, in recent years, to recognize the gouty or lithæmic throat as a well-defined type of catarrhal disease. The importance of this discovery will appear when we take up the question of therapeutics for consideration.

To the clinical observations and therapeutic studies of the past ten years we owe the very valuable discovery that obstruction of one nasal passage — when associated, as it sometimes, or, perhaps, often is, with hypertrophy of the mucous membrane of the vault of the pharynx in the median line — produces very much the same mechanical effects upon the drum cavity of the corresponding side, and upon its contents, as does an obstructed Eustachian tube. The mechanism of the action, however, is different. Each act of swallowing means the exhaustion of the air in the vault of the pharynx. In a normal condition of the nasal passages air enters freely through these to fill the vacuum created by the swallowing. The aërostatic conditions in the drum-cavity are therefore very little, or not at all, disturbed by this act. But let the nasal and naso-pharyngeal obstructions occupy such positions that air cannot instantly rush in from the nasal cavities to fill the vacuum referred to, a suction force will immediately be exerted upon the air contained in the tympanic system of cavities. The result is of a twofold character: there will be, for a short time, greatly diminished atmospheric pressure upon the mucous membrane of the middle ear on the one hand, and greatly increased atmospheric pressure upon the outer surface of the membrana tympani on the other. Imagine this state of things to be repeated scores of times every day, and it will be an easy matter to understand how injurious the effects may be upon the apparatus of hearing.

Among the minor exciting causes, the influence of which in aggravating and perpetuating the catarrhal activity is better understood to-day than it was in former years, may be mentioned tobacco-smoking. The habitual practice of forcing the smoke from the mouth into the naso-pharyngeal cavity and thence out through the nasal passages, is highly conducive to the maintenance of a congested and swollen naso-pharyngeal mucous membrane. It is not improbable that the smoke of burning paper, as where cigarettes are used, is more irritating to the parts than is that of the tobacco-plant alone. But even the mere smoking of a cigar or pipe in the ordinary manner aggravates the catarrhal irritation. The smoke is drawn into the cavity of the mouth, and is then almost immediately expelled. While it would seem as if this mode of using tobacco ought not to bring any of the smoke in contact with the pharyngeal and naso-pharyngeal mucous membrane, it is a well-established fact that the smoke does constantly come in contact with these parts and exerts upon them a drying, and therefore an irritating, effect.

Climatic influences have always been considered as active agents in promoting or restraining chronic catarrhal inflammation of the middle ear; but I am not aware that we have yet learned how to differentiate between the conditions of soil, atmosphere, rainfall, wind, etc., which promote the catarrhal activity and those which favor its subsidence. The prevailing belief that dampness of the soil and of the atmosphere, and also that high winds and dust favor catarrhal disease, is undoubtedly in the main correct; but we so often encounter exceptions to this rule that we are obliged to confess that our knowledge is not yet equal to the task of defining the climatic conditions that favor catarrh.

In former years it was a very common practice to use both woollen and fur wraps about the throat during the winter season. This practice has now very greatly diminished, and I am disposed to believe that the diminution may in large measure be ascribed to the protests of sensible medical men. However appropriate such wraps may be in more northerly latitudes, it is very certain that in a climate like that of New York, woollen mufflers and fur collars are harmful rather than beneficial; they play an active part in promoting catarrhal affections of the throat and nose.

There is still another way in which the catarrhal tendency of certain individuals is kept active during the cold season. I refer to the peculiarly American craze for fresh air under any and all circumstances. Sometimes the fault lies with the sufferer himself or herself, and manifests itself in the adoption of the habit of always sleeping in a room with an open window. Sometimes, however, the sufferer is perfectly innocent, but falls a victim to the selfishness of one of those fresh-air fiends who make our railway cars, our club-rooms, and other places of public assembling, nurseries of pneumonia, bronchitis, and countless minor ailments.

Finally, there is another exciting cause, which I believe is much more common than it is generally supposed to be. I refer to the irritating effects of retained and inspissated secretion in the crypts of the tonsils. In former years I saw but few of these cases, as it was not my habit to explore these cavities unless I saw actual evidence, in the shape of a whitish spot, showing that there was such an accumulation in the crypt. In recent years I have adopted the rule of exploring the half-dozen or more crypts in each tonsil whenever I find them appreciably enlarged, and especially if they show decided evidences of congestion. A slender ring-shaped curette of steel, with nicely rounded edges, answers the purpose of an exploring and evacuating instrument admirably. The improvement which follows the removal of these foul-smelling cheesy masses, and the washing out of the cavities with a moderately strong mixture of Listerine[1] and water (1 to 3 or 4) is generally very pronounced.

We come now to the consideration of the treatment of the disease. As you are well aware, a large proportion of the cases which come under our observation may be classed as incurable. My impression is that they are incurable, as a general thing, because the catarrhal changes have reached the last stage, that of contraction and atrophy of the previously swollen mucous membrane. It is safe to assume that, as a result of these changes, there is diminished mobility of the joints of the ossicles, and particularly of the stapedio-vestibular joint or of the membrane which holds the stirrup firmly in the oval window. But in a good many cases which seek aid from the physician the disease is still in the stage of congestion, hypertrophy and hypersecretion, and under these circumstances we may reasonably expect to obtain beneficial results from the adoption of suitable therapeutic measures. The first thing to be done, in every case, is to examine carefully into the antecedent history and habits of life. By such an examination we shall often be able to determine whether we are dealing with a catarrh which is aggravated by tobacco-smoking; or with one which is kept unnecessarily active by exposure of the uncovered head to slight draughts of cold air during sleep; or, finally, with one which owes its chief activity to a lithæmic diathesis. In the case of the smoker it may not be necessary to interdict the practice altogether; an indulgence in a single cigar, or at most two, during the twenty-four hours, will often be found permissible. On the other hand, the practice of sleeping, in cold weather, with the window of the room partially opened, should be abandoned. I have known a distressing tinnitus aurium to disappear soon after the sufferer had abandoned this practice; and at a later date, when the same person again allowed the window to remain open a distance of a few inches, at night, the tinnitus at once reappeared, to disappear again when the practice was for the second time abandoned.

[1] Listerine is a manufactured fluid preparation containing, among other ingredients, thymol.

A chronic naso-pharyngeal catarrh, in a person suffering from lithæmia, is an exceedingly stubborn affection to treat. Local applications alone seem to make very little impression upon the swollen mucous membrane. In former years, before I appreciated how important a part this lithæmic condition played in the causation, or at least aggravation of these chronic catarrhs, I used to wonder at the insignificance of the results obtained by my systematic paintings of the pharynx with nitrate of silver solutions. At the present time I can see how irrational such treatment was. It dealt with a mere surface manifestation of the disease, while ignoring the chief underlying cause.

The proper way of managing these cases is to aim first at securing the complete elimination from the circulation, and from the tissues generally, of the offending materials. Inquire minutely into the patient's daily life, as regards the amount of physical exercise which he is in the habit of taking, and also as regards his diet (both food and drink). Almost invariably it will be found that the patient takes far less exercise, especially outdoor exercise, than is essential to the proper elimination of the waste materials of the body. Insist upon it—in the case of a full-grown man—that he shall get, on an average, not less than four miles of walking daily, or the equivalent of this in some other form of open-air exercise. In the matter of diet, he should be urged to leave off coffee, pastry, and all alcoholic drinks—or else to add an extra mile or two of walking as an offset to these indulgences. A warm bath every night, followed by brisk rubbing with a coarse towel, will stimulate the skin to perform its emunctory functions with increased vigor. Every morning, or every other morning, on rising, and at least half an hour before breakfast time, he should take a heaping teaspoonful of Rochelle salts dissolved in a tumblerful of water. This will serve the double purpose of facilitating elimination by way of the kidneys, and of stimulating the bowels to greater activity. A glass or two of Vichy water, taken during the course of the day, between meals, will serve as an additional aid in facilitating the process of elimination.

There are not a few patients, generally men of portly habit and well-to-do in the world, who seem to lack the energy necessary for the faithful carrying out of these instructions in regard to exercise, etc. They are so stereotyped in their daily business habits that they resent any advice that calls for the slightest disturbance of these habits. Such patients often find it easier to give up their business altogether for two or three months; and when this is the case I urge them to go abroad, and spend a month or six weeks at Carlsbad, Aachen, Baden-Baden, or at any other well-organized bathing establishment, where the systematized drinking of the waters, under competent medical guidance, together with a simple diet, regular hours of retiring, and quiet outdoor life, exerts a markedly beneficial effect upon the lithæmic condition in general, and upon the local pharyngeal condition in particular. It seems strange that in our own country we should still lack similarly well-organized bathing establishments. There certainly is no lack of suitable medicinal springs, but, unless I am inadequately informed on the subject, there is not a single bathing institution in the country where we can send a patient with the same degree of confidence as we can to Carlsbad, Aachen, or a dozen other places that I might name.

In a few cases, as, for example, those of women with uterine affections, and of men with rheumatic or gouty affections of the lower limbs, we cannot secure the desired amount of voluntary physical exercise, and we are consequently compelled to fall back upon the less valuable methods of passive exercise—massage, the so-called parlor gymnastics, etc. While these means are not so effective as good outdoor exercise (walking, riding, rowing, tennis, etc.), they can nevertheless be relied upon, if carried out faithfully and intelligently, to accomplish the same results in the course of a longer period of time.

Finally, we come to the consideration of the local treatment of the disease. As I stated in an earlier part of this paper, the chief object aimed at, from fifteen to twenty years ago, was to bring remedies to bear directly upon the tympanic cavity proper. The lesions affecting the apparatus of hearing are, it was argued, chiefly located in this cavity, and the inference was therefore drawn that the remedies which are suitable for the relief of these lesions should be brought to bear directly upon them. From this idea developed the practice of forcing remedial vapors, sprays, and fluids into the middle ear through the assistance of the Eustachian catheter. While this method of treating the tympanic cavity was very generally employed by aural surgeons throughout the world up to about ten years ago—and is, so far as I can learn, still universally employed throughout continental Europe—in our own country it is used rather as a collateral aid; the doctrine being generally accepted that the main seat of the disease is located in the naso-pharyngeal cavity, and that our *chief* therapeutic efforts must be directed to this region if we wish to obtain a full measure of success. When we come, however, to compare the different procedures which the various authorities recommend as best suited for the attainment of the end desired, we find that there is a very wide divergence of opinions in regard to what are the best means of effecting a cure. Of all the different methods of applying remedies to this region, the favorite one at the present time, and for a long time past, is that by means of finely subdivided sprays. The use of the posterior nares syringe comes next, I think, in popularity. Curved instruments, armed with cotton which is to be saturated with the remedy selected, are, I suspect, not so generally preferred as are the other two methods; and yet my own judgment, based entirely on personal experience, promptly gives the preference—so far as both safety and efficiency are concerned—to the latter method. As I cannot claim that I obtain better results from treatment than do my colleagues who use the other methods of applying remedies to this region, it seems plain that there is no such thing as *the best* method. The old saying, "All roads lead to Rome," does not need to be greatly modified in order to make it apply to the subject in hand. There are certainly very many ways of making effective remedial applications to the vault of the pharynx.

The same diversity of opinions which exists in regard to methods is encountered when we come to consider the question of remedies. Nitrate of silver, tincture of iodine, tannin, alum, chloride of iron, carbolic acid, and a series of less important drugs, all possess strong advocates. Nitrate of silver and tincture of iodine are unquestionably the most efficient remedies known, in respect to their power to diminish undue vascularity, infiltration, and hypersecretion of a highly glandular mucous membrane. They are, however, difficult remedies to manage. Like a two-edged sword, they sometimes cut both ways—toward remedying the disease and toward aggravating it. This peculiarty of nitrate of silver, in particular, has led some excellent authorities to pronounce judgment in strong terms against the employment of this drug in the treatment of naso-pharyngeal catarrh. Such anathemas remind me of those which were pronounced, not many years ago, against the use of probes, steel hooks, forceps, etc., in the external auditory canal and cavity of the tympanum. Those who do not possess manual skill, and who are too lazy or too heedless to give careful thought to the different steps of any therapeutic procedure which they may adopt, should carefully abstain from the use of any instrument or drug that calls for both manual skill and judgment in its management. The mere fact, however, that a very valuable drug or remedial procedure is dangerous or inefficient when handled carelessly or without knowledge, should not warrant us in condemning it. We should rather aim at studying more thoroughly the conditions under which it may be used both safely and effectively.

I should only weary you, were I to enter into a detailed account of the different ways of using nitrate of silver or tincture of iodine both safely and efficiently, and I shall therefore pass on at once to the consideration of other matters.[1]

Hitherto, in discussing the question of treatment, I have referred only to those measures which are intended to relieve a diseased condition of the mucous membrane. Although these measures are of paramount importance, we cannot ignore the fact that we have also to deal with the mechanical effects resulting from this diseased condition. These effects are: First, increased atmospheric pressure upon the outer surface of the drum membrane, from obstruction of the Eustachian tube; and, second, the tendency of all fibrous tissues to contract or retract after long-continued inflammation. The tendons of the tensor tympani and stapedius muscles and the fibrous tissues of the ligamentum annulare (in the oval window), and probably, also, of the membrana tympani secundaria (in the round window), are the more important tissues which may undergo this change—a change disastrous to the function of hearing. As regards our ability to combat directly the two different conditions enumerated above, we stand to-day precisely where we stood twenty or more years ago. Inflations of the tube and middle ear constitute, practically, our only remedy for the relief of these conditions.

A word or two with regard to the home use of nasal sprays, and I will bring this unduly long paper to a close. Some months ago, at the suggestion of my friend Dr. Delavan, of this city, I instructed one of my patients—who has been for years a sufferer from chronic nasopharyngeal catarrh, accompanied by very distressing tinnitus which interfered seriously with sleep—to employ, several times daily, a nasal spray of one part of Listerine in three of water. The experiment proved quite successful, the relief of the tinnitus being very marked. I have, since that time, had occasion to recommend the same plan of procedure to several other patients, and the results obtained justify me in saying that it is at least worthy of being fairly tried in our treatment of this exceedingly rebellious form of disease. My impression is that the rapid decomposition which takes place in the nasal mucus that tarries in the various recesses of the vault of the pharynx, and in the adjoining nasal passages, lends to this secretion an irritating property, and that the Listerine spray, when used somewhat frequently, is competent to render it bland and unirritating. Valuable as this procedure may prove as an aid to the more fundamental methods already referred to, I do not anticipate that it will ever render these unnecessary.

Within the narrow limits of a single paper it is not possible to do justice to all the important questions which arise in connection with the topic which I have chosen. I have, therefore, made no attempt to cover the ground thoroughly, but have contented myself with discussing briefly such parts of the subject as I thought might prove of interest to you. In this way it happens that not a few points, some of them even of the highest importance, have not even been mentioned by me.

TIN OLEATE FOR THE NAILS.—Thomas H. Irquhart writes to the *Therapeutic Gazette:* "I used the tin oleate some months ago on my finger-nails, which commenced to split and break soon after I left the army, the result of scurvy contracted in the military service. I anointed the nails every day with the oleate, and at night applied it on a narrow flannel bandage. In about two months all the nails were sound and tough. I applied the oleate to the nails of a young lady friend with like success. It is also a beautiful polish for the nails."

[1] Those who may not be familiar with these methods will find the matter discussed somewhat fully in my work on Diagnosis and Treatment of Ear Diseases, and under the heading "Ear: General Therapeutics," in the Reference Handbook of the Medical Sciences.

THE INFLUENCE OF MATERNAL IMPRESSIONS IN THE ETIOLOGY OF CONGENITAL DEFORMITIES.[1]

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MR. CHAIRMAN AND MEMBERS OF THE ORTHOPÆDIC SECTION: It is with some misgivings that I have ventured to present this subject for your consideration this evening, for it is one that is generally classed with old wives' fables and popular superstitions, and regarded as unworthy of even passing attention from scientific physicians of the present sceptical age. However, I think you will all be ready to admit that our knowledge of the etiology of congenital deformities is as yet so rudimentary that we can ill afford to despise any effort made to solve the mystery, and it behooves us to examine, with at least respectful consideration, any theory, however contrary to our preconceived notions, which bears upon it the stamp of even slight plausibility. And I hope, as far as is possible in a brief paper, to demonstrate to you this evening that there are certain elements of plausibility in the assumption that the development of the fœtus in utero may be influenced for weal or for woe by the mental processes of the mother.

My attention was first directed to this subject when I was a student of medicine in Philadelphia in 1874. The late Professor Ellerslie Wallace, of the Jefferson Medical College, who was a firm disbeliever in the influence of maternal impressions, but who was a man who never shrank from facts which seemingly argued in the face of his theories, exhibited to the class the dead body of a full-term infant which had been born a few hours before. The mother, when nearly at the end of her term, had been very severely scalded on the arms and portions of the body by the upsetting of a kettle of boiling water. She was taken to the hospital, and very soon after admission gave birth to a dead child. This child was marked on various parts of the arms and body with peculiar livid patches, situated beneath the integument, the skin itself being unabraded and normal in appearance. We did not see the mother, but Dr. Wallace assured us that he had examined both very carefully, and that the patches on the child corresponded exactly in outline and situation to the scalds upon the mother. This case impressed me most forcibly at the time. The lecturer called it a very remarkable coincidence, but it seemed to me then, and does still, that it required greater credulity to look upon the occurrence as a coincidence than it did to regard it as the result of some as yet unrecognized natural law; and I thought the wiser course would be to endeavor to discover this law and to trace its operations than to dismiss the case as a medical curiosity.

My purpose this evening, therefore, is to present to you certain facts, or alleged coincidences, either gleaned from medical literature or which have come under my own observation, which have led me to believe that the popular notion that the development of the fœtus is influenced by maternal impressions is one which contains at least a germ of truth, and which, therefore, is not unworthy of study by scientific men.

In the case to which I have just referred the markings upon the child could not, it is true, be attributed to mental impressions, for they corresponded to actual lesions upon the body of the mother. But if physical injuries, received toward the end of pregnancy, can be so rapidly photographed upon the body of the unborn child (for, as I remember the case, less than twenty-four hours had elapsed between the scalding of the mother and the birth of her infant), why might not mental injuries, continuing through weeks or even months, likewise impress their image upon the plastic frame of the fœtus? We

[1] A paper read before the Orthopædic Section of the New York Academy of Medicine, December 17, 1886.

are ready to admit the influence of the mind upon the body of the same individual, and have even classed by themselves the deformities and other physical ailments of hysteria; hypnotism and mental suggestion are beginning to assume an important place in the therapeutics, not only of mind diseases and various neuroses, but even of what we are wont to consider physical maladies. We cannot deny that diseases of the mother can be transmitted to the child in her womb; and we note the similarity in form, feature, and mental characteristics between parent and offspring; why, then, is it *à priori* so absurd to ascribe certain physical defects in the child to morbid mental impressions on the part of the mother?

"Probability," says Butler, "is the guide of life," and it is only by considering the weight of probability on one side or the other of a question that we are able to come to any definite or satisfactory conclusions. At first sight, I admit, it seems highly improbable that abnormalities in the growth or development of the fœtus can be caused by purely mental processes, apart from any actual disease on the part of the mother; and one single occurrence or a dozen occurrences, apparently establishing a relation of this sort of cause and effect, should have little weight in upsetting this antecedent improbability. But when facts of this nature can be counted, not singly or by dozens, but by scores and hundreds, we are forced to believe that possibly they are not mere coincidences, but may be expressions of an etiological law. I venture to assert that there is hardly a physician, of even a few years' experience, who has not met with some instances of this sort; they are for the most part regarded as rather strange coincidences, and are perhaps only mentioned in casual conversation among the other curious experiences of a doctor's life; but if one could collect the aggregate experience of the profession in such matters, it would, I doubt not, serve to convince even the most sceptical that, explain it how he might, maternal impressions do sometimes influence the physical development of the fœtus. In the very hasty glance which I have been able to make through a portion of the more recent periodical literature, I have read accounts of nearly two hundred more or less striking instances of this nature, and they are unquestionally but a small part of the supposed coincidences which have been met with, but which were not deemed worthy of record. I shall not inflict upon you the recital of all these cases, but will beg your indulgence for a very few moments while I relate three or four to serve as samples of the rest.

A lady brought her baby, aged a few months, to me for treatment. The child, perfectly healthy and well formed in every other respect, had a very pronounced talipes equino-varus of the left side. The mother said that, very early in her pregnancy, her husband was brought home one day, having fallen and broken his ankle. As she saw him brought into the house, his shoe and stocking having been cut off, she noticed the foot turned to the inner side. It naturally startled her considerably, and for months she dwelt on the occurrence, having the picture of the displaced foot always in her mind.

Mr. Crickmay has related in the *British Medical Journal*, May 29, 1886, that a man came to him, holding up his right arm, the hand of which had been obliquely severed by the knife of a chaff-cutter, leaving only a small portion of the thumb. A woman about two months advanced in pregnancy heard next day the details of this accident. She felt very sorry for the man's misfortune and experienced great distress when repeating an account of the occurrence to some friends. In due course of time this woman was delivered of a male child whose arm was without a hand, the stump, however, bearing the rudiment of a thumb. In the same journal, under date of September 1, 1877, Dr. Augustus Hess tells of a young married lady, in France, who lived in constant fear that her husband, who was a man of obstinate will, would fulfil a threat which he had made to chop off the thumb of his left hand in order to avoid military service in case he was conscripted. While this fear still preyed on her mind she became pregnant and gave birth to a child, who was well formed in every respect except that the thumb of the left hand was missing.

The following case, from the same paper, of the issue of November 3, 1877, is very striking by reason of the peculiar nature of the deformity. Dr. Jasper Cargill writes: "A lady in the early stage of pregnancy sent for me one morning to see her little boy, aged three years, in consequence of a puppy having bitten the glans penis. There was some swelling of the parts, which bent the penis in such a manner as to cause the child to micturate backward between the thighs. The mother was very much alarmed at the time. I attended this lady in her confinement. Two days afterward I was requested by the nurse to examine the baby (a boy), because the penis was found to be deformed. The glans was quite round and bent, and the meatus looked backward, precisely resembling the little boy's penis which had been bitten by the puppy."

M. Jules Guérin related to the French Academy of Medicine a rather curious case, in which the causation of the deformity might perhaps be referred to heredity, but which, I think, is rather an illustration of the influence of maternal impressions. Indeed, I am not sure that many, if not most, of the odd deformities which we sometimes see running in families may not be more justly attributed to the influence of maternal impressions than to heredity. I anticipate here the objection which has been raised by many, that deformities occurring in the lower animals are not infrequently transmitted to their offspring. But I fail to see the force of this argument, for why cannot a cat or a cow have mental impressions? Sir John Lubbock has given us many examples of an instinct—if you wish to call it by that name—in animals which is apparently of a higher order than the intelligence exhibited by some of our fellow-creatures. But you say, perhaps, that animals are not so observant as to notice deformities in their fellows. They are, however, observant enough to recognize each other, and to distinguish between friends and strangers. Even the ants in a densely populated hill can tell at once a member of their community from a stranger. If animals can do this they must be able to recognize differences in form and figure (I do not forget that the sense of smell is also an important aid); and why should they not therefore be cognizant of deformities in themselves and others?

A remarkable instance tending to prove the influence of maternal impressions in the lower animals is cited by Spitzka, in his work on insanity. "At the meeting of the Zoological Society of London, held February 24, 1863, Dr. C. E. Gray, the curator of the British Museum, presented the body of a chicken whose beak and feet closely resembled those of a parrot. The sender of the specimen reported that several such instances had occurred in his poultry-yard, and he attributed the monstrosities to the fact that one of the hens had been frightened by a parrot, which was kept in a cage in the same yard, and which had the habit, when the hens approached its cage for food, of screeching violently at them."

But to return to the case cited by M. Guérin, and which I find related in the *Gazzetta degli Ospitali* of February 21, 1886. He presented to the Academy a women and her three children, each of whom had a deformity of both hands consisting of an angular deviation of the index-fingers, the second phalanx forming a right angle with the axis of the first. The mother of this woman had the same malformation, and the woman herself at each pregnancy was greatly worried by the fear that her child would be similarly deformed.[1]

[1] Dr. J. G. Peters has called my attention to two cases of double monstrosity, related by Mr. F. Le Gros Clark in the St. Thomas Hospital Reports. The mother, in each instance, was, at about the time she became pregnant, very strongly and disagreeably impressed by representations of the "double-headed nightingale," who was then on exhibition. The fœtus, in each case, was double as to its upper portion and resembled the monstrosity which was the cause of the maternal impression.

I feel some hesitation in speaking of congenital nævi and erectile tumors, the so-called mother's marks, for these have been made the special object of ridicule by those who believe the mother is an impassive agent in the production of her offspring—a sort of creative automaton. But the occurrence of birthmarks is, I maintain, often attributable to maternal impressions, although, of course, I do not pretend to say that every spot or blemish on the skin of an infant, any more than every congenital deformity, is due to this one cause. I will instance but one case of this nature, which is related by M. de Saint-Germain, who himself is an opponent of this theory, in his "Chirurgie Orthopédique." While he was in charge of the maternity service at the Hôpital Cochin, a woman was admitted who was in great distress, saying that she was to give birth to a squirrel. She related that toward the end of her fourth month, while she was passing a bird-fancier's, a squirrel leaped from its cage onto her shoulders, giving her a great fright. She was delivered at term of a fine child, who presented along the spinal column, from the seventh cervical vertebra to the coccyx, about forty long red hairs, like those on the back of a squirrel. Those hairs were not permanent, but fell off at the end of a certain time.

A case in which there was congenital absence of hair is narrated by Dr. William T. Taylor in the *Philadelphia Medical Times* of November 15, 1876: "A medical man told me that one of his children had a bald spot on its head, which his wife says arose from the circumstance that, in the early months of her pregnancy, she was frequently looking at the shining bald head of her father-in-law, with an unaccountable delight."

Several cases of birthmarks, possibly due to maternal impressions, are related by Tuke in his work on the "Influence of the Mind upon the Body."

Dr. F. K. Bailey related a case, somewhat similar to that mentioned in the beginning of this article, in the *Medical and Surgical Reporter* of May 31, 1873. A lady who was pregnant came under his care for severe neuralgia. A blister was applied near the trochanter major. On the birth of the child there was plainly seen a brownish spot, exactly corresponding in shape and locality with the blister which had been formed on the mother's thigh. The child lived thirty days, and the discolored spot remained distinctly visible during this time.

I may anticipate here two objections which are frequently raised by disbelievers in the theory which we are discussing. I think it is Darwin, in his work on "Plants and Animals under Domestication," who relates that Hunter made a practice of asking every woman, before her delivery, whether she had any reason to suppose that her child would be deformed or marked in any way. He made inquiries in about two thousand cases, and in no case did the deformity in the child correspond to the mother's fears. In the *American Journal of Insanity* for January, 1870, Dr. Fisher states that he made such inquiries in every case occurring in his practice during a period of twenty years, and though many women expressed their fears, and even described the malformation which they anticipated that their children would bear, he met with but two cases of congenital deformity; and even in these cases there was no apparent correspondence between the malformation and the mother's apprehension.

This is, I admit, strong negative evidence, but negative evidence carries less weight than does positive testimony; and two hundred cases in which the malformation of the infant corresponded to the fears of the mother, expressed before the birth of her child, should, I think, be held to argue more strongly in favor of this theory than two thousand cases in which no such correspondence existed could argue against it.

The second objection is one that has been raised by some German investigators, who examined into a number of alleged instances of maternal impressions, testing them by the known facts of embryology. They found in many cases that the arrest of development must have occurred at a time long before that at which the mental shock was received, and thus proved that such malformations could not have been caused by the fright of the mother. But, while I recognize the force of this argument in certain cases, I cannot see that it disproves the theory. It is not contended that every congenital malformation is the direct result of a maternal impression, any more than it is that every thought or idea originating in the mind of a pregnant woman must of necessity have its influence upon the development of the child in utero. The cases to which I refer especially this evening are not those of arrested development from a sudden shock, but rather of perverted development resulting from a fixed and long-continued mental impression. That the relation of cause and effect can be disproved in a certain series of cases is not sufficient to warrant us in rejecting presumptive evidence in favor of this relation in other cases.

Let us suppose that a child is known to have been exposed to the contagion of measles, and that this child goes home and is seized at once with a disease presenting all the symptoms of this same malady. We would say that the child could not have acquired the disease from this known exposure, because there was no appreciable period of incubation, but we would not be warranted in assuming that measles is not contagious. We could only say that there must have been some previous exposure. And so it is in the cases quoted by the German observers; the malformations in these instances could not have been caused by the known maternal impressions, but they were to be referred to some other cause acting at an earlier period. This simile is, perhaps, not very apt, but it will serve, I think, to explain my meaning.

It is not my purpose this evening to discuss at length, even were I able to do so, the manner in which the mental action of the mother influences the growth and development of the child. We know as yet too little of normal embryology and fœtal growth to discuss satisfactorily the pathological side of reproduction, and my object has been rather to suggest to you the possible importance of one factor in the etiology of congenital deformities, reserving the consideration of its *modus faciendi* for another occasion. I cannot, however, pass this subject by entirely, for a rational explanation of a seemingly remarkable occurrence goes more than halfway toward removing the difficulties which we experience in accepting it.

Brodhurst says that congenital deformities are due to arrest of development, to increased development, or to muscular spasm in the fœtus. This would answer, perhaps, as an explanation of the occurrence of deformities strictly so called, although I think he might better have substituted the term perverted development, which would include certain cases in which there is neither an arrest nor an increase. But in order to more easily explain the subject we must go beyond the title of this paper, and include under the term deformities all congenital deviations from the normal, whether mental or physical. This is the more necessary since we are dealing with a something which, whatever may be its subsequent phases, originates in the cerebral cells of the mother; and we may, therefore, not unreasonably expect, from a study of nervous aberrations of congenital origin, to derive some assistance toward a better comprehension of the malformations of the body.

Congenital idiocy is acknowledged by many authorities to be very frequently a result of violent temporary emotion, or of a more prolonged but less vivid mental disturbance, such as grief or anxiety, on the part of the mother during her pregnancy. But idiocy is almost always accompanied by asymmetry of cerebral development, cranial malformation, or even club-foot or other gross deformities. Now, if idiocy may be caused by psychical troubles of the mother, why may not also the malformations which accompany, or may even be the direct occasion of, the mental disturbance be fairly attributable to the same influence?

Chorea may, in very rare instances, be congenital. Putzel has collected eight cases reported by various observers, in four of which the probable exciting cause was mentioned. "In Mayo's case the mother had been extremely nervous for a period of two months after a disgusting object had been thrown upon her bosom (while she was four months advanced in pregnancy). In Richter's two cases, the mothers had been very much frightened shortly before confinement. Spamer mentions, with regard to his case, that the mother had been very nervous and depressed, during the entire period of pregnancy, on account of the death of one of her children."

Dr. E. H. Addenbrooke relates the following instance of congenital facial paralysis caused by maternal impressions (*British Medical Journal*, May 13, 1871). "A few weeks since, while attending Miss B——, I noticed that her mother suffered from paralysis of the muscles of the left side of the face. Mrs. B—— informed me that the affection was congenital, and gave me the following history: Her mother and her mother's sister (both of them pregnant) were staying with Mrs. B——'s grandmother, nursing her in her last illness. One night, as they were both assisting her to the night-stool, the old lady was suddenly seized with hemiplegia, the facial paralysis being specially noticed by them. Both daughters were confined three or four months afterward, and each of the children suffered from congenital facial paralysis of the left side. Mrs. B—— tells me that she has often seen her cousin, and that she is afflicted in precisely the same way as herself. The two mothers often used to lament together over their children's deformity."

A classical instance of a mental peculiarity apparently traceable to maternal influences is that of King James I. Sir Kenelm Digby [1] relates that the king had a great dread of a drawn sword, and attributes it to the fright which Queen Mary received while pregnant, when she witnessed the murder of Rizzio. When Sir Kenelm was knighted by James, the latter, he says, could not look at the sword, and "he had almost thrust the point into my eye, had not the Duke of Buckingham guided his hand aright." Another case somewhat similar to this is narrated by Dr. E. Seguin in the *Philadelphia Medical Times* of December 23, 1876.

The following instance of eclampsia from maternal impressions, related by Dr. Bailey in the *Medical and Surgical Reporter* of May 31, 1873, is suggestive. A pregnant woman nursed her son, seven years old, through an attack of cerebro-spinal meningitis. The convulsive seizures were frequent and severe. Her infant, when born, was well developed in every way, but had spasms every time his bowels moved; the face would become livid, the head was thrown back, and episthotonus was marked, the eclamptic attacks resembling precisely those from which his brother had suffered. The affection disappeared in about a year.

It is a recognized fact that convulsions in nursing infants may be produced by mental excitement of the mother or nurse. Now, if a mental disturbance on the part of the mother may so affect her milk as to make it poisonous to the child, it does not seem unreasonable to suppose that the blood of the pregnant woman may, in like manner, become changed so as to act injuriously upon the fœtus. It makes no difference, in the first case, whether the milk becomes simply indigestible and thus excites eclampsia reflexly, or whether it contains some poisonous principle which enters the blood and acts directly upon the nervous centres. Its composition is changed, and changed as a consequence of the unique cerebral activity of the mother. The mental impressions of the pregnant woman act, I believe, in a similar way upon the fœtus. The blood of the mother is altered, or receives upon it some impression, the nature of which we have at present no way of determining, and perhaps may never learn, but which induces like changes in the blood of the embryo; and this in turn acts upon the nerve-centres, and thence upon some special organ or part of the fœtal body to which the mind of the mother was specially directed. I do not refer now to those cases in which some sudden and momentary mental shock causes the death of the child, arrests its development, or induces abortion; but to the less coarse changes, resulting from continued mental concentration, and which are manifested by some localized mental or physical defect of the infant. The gross derangements of the embryo may, indeed, be produced in the same way through the placental circulation, but they are less evidently the result of a special mental process on the part of the mother.

Dalton says in his "Human Physiology": "There is little room for doubt that various deformities and deficiencies of the fœtus, conformably to the popular belief, originate, in certain cases, from nervous impressions experienced by the mother. The mode in which these effects may be produced is readily understood from the anatomy and functions of the placenta. It is well known how easily nervous impressions will disturb the circulation of the brain, the face, or the lungs; and the uterine circulation is quite as readily influenced by similar causes, as shown in cases of amenorrhœa and menorrhagia. If a nervous shock may excite premature contraction in the muscular fibres of the pregnant uterus and produce abortion, it is undoubtedly capable of disturbing the circulation of the blood in the same organ. But the fœtal circulation is dependent, to a great extent, on the maternal. The two sets of vessels are united in the placenta, and as the fœtal blood has much the same relation to the maternal that the blood in the pulmonary capillaries has to the air in the pulmonary air-cells, it must be liable to derangement from similar causes. And, lastly, as the nutrition of the fœtus is provided for wholly by the placenta, it will suffer from any disturbance of the placental circulation. These effects may be manifested either in the general atrophy and death of the fœtus, or in the imperfect development of particular parts; just as in the adult a morbid action may operate upon the entire system, or may show itself in some one organ, which is more particularly sensitive to its influence."

The following case, related by Dr. Robert B. Carter in his work on the "Pathology and Treatment of Hysteria," is an illustration of how a mental impression can occasion a local lesion. "A lady who was watching her little child at play, saw a heavy window-sash fall upon his hand, cutting off three of his fingers, and she was so much overcome by fright and distress as to be unable to render him any assistance. A surgeon was speedily obtained, who, having dressed the wounds, turned himself to the mother, whom he found seated, moaning and complaining of pain in the hand. On examination three fingers, corresponding to those injured in the child, were discovered to be swollen and inflamed, although they had ailed nothing prior to the accident. In four-and-twenty hours incisions were made into them and pus was evacuated; sloughs were afterward discharged, and the wounds ultimately healed."

We know that there is a more intimate connection between the embryo and its mother than is evidenced by the anatomical relations which we are able to trace. It is the common experience of stock-raisers and dog-fanciers that a female which has had young by a male of another race will never breed true again. Any young which she may subsequently have will betray some characteristics of the male parent of the first progeny.[1] Thus the fœtus impresses upon its mother some indelible change, primarily in the blood and then probably in the nerve-cells. But if the fœtus can thus influence the nerve-cells of the mother, it is reasonable, especially in the light of the facts

[1] A late Discourse made in a Solemne Assembly of Nobles and Learned Men at Montpellier, in France. Rendered faithfully out of French into English by R. W. London, 1658.

[1] A number of instances of this sort, occurring in the human species as well as in the lower animals, are related in a recent interesting work by Dr. Alexander Harvey, entitled, On the Fœtus in Utero, as Inoculating the Maternal with the Peculiarities of the Paternal Organism.

which we see repeated around us, to conclude that the nerve-cells of the mother can influence the growth and development, mental or physical, of the embryo.

Of course, I do not pretend to maintain that maternal impressions are the cause of all congenital deformities, or even of many: indeed, I believe that very few of the malformations seen in the new-born child are so produced. And it is fortunate that it is so, for were every pregnant woman who has received a strong mental shock, or whose thoughts have run in one particular channel for any length of time, to give birth to a deformed child, humanity would present a sad spectacle indeed. But I do believe, and I think my belief rests upon a strong foundation of facts, that the mental impressions of the mother oftentimes react, for good or for bad, upon the growing form of the child in her womb. A violent nervous shock is liable to cause the death or arrest of development of the embryo; a less severe, but more prolonged, mental impression may occasion a perversion of development. In the first case, if the child live, it will be a monstrosity; in the second case, it will be simply deformed in some part, and the peculiar nature of the deformity, or the part affected, will be determined by the nature of the mental process on the part of the mother. The concentration of her thoughts upon some particular anatomical portion may cause that portion of the child to assume the shape corresponding to the appearance that exists in the mother's mind. In the first case, the blood is so altered as to be actually poisonous to the growing embryo. In the second case, it is the medium for transmitting nervous actions from the mother to the child; and that child's nervous system is then placed in a condition similar to that of an hysterical woman, in whom a particular part of the body may become deformed or the seat of inflammatory changes from purely nervous causes.

102 East Fifty-seventh Street.

REPORT OF A CASE OF TYPHOID FEVER IN WHICH ANTIFEBRIN WAS USED SUCCESSFULLY AS AN ANTIPYRETIC AGENT.

By GEORGE R. ELLIOTT, M.D.,

NEW YORK.

The patient had well-marked typhoid fever. Antifebrin was the successful antipyretic agent employed after other antipyretic means had failed. The effect of this drug was so wonderful that I feel no apology is necessary for briefly reporting its use in the following case:

Mr. C. J. Bishop, aged twenty-one, an actor of prominence, arrived from San Francisco during the last week of October complaining of anorexia, malaise, headache, and febrile symptoms, which moderately large doses of quinine had failed to relieve. I was asked to assume charge of this patient by Dr. J. H. Douglas, and saw Mr. Bishop for the first time on the morning of October 31, 1886. In the father of the patient, Dr. C. B. Bishop, I found a medical gentleman of unusual skill and acquirements, and so endeared to his son that no symptom was overlooked and every detail in treatment was rigidly carried out. The drinking of well-water in Southern California was the probable etiological factor in the production of the disease.

As near as we could estimate, it was the seventh day of the disease. The thermometer registered 104⅘° in the mouth at 5.30 P.M.; pulse 104, with a fairly good tension. The abdominal symptoms were negative, excepting enlargement of the spleen. There was moderately profuse bronchitis. Having had malarial attacks previously, it was a question whether or not malarial miasm was complicating the present difficulty.

He was moderately purged with triturated calomel and ordered to have thirty grains of quinine during the night in divided doses of fifteen grains each, and diet to be liquid in character. With the following day came only marked cinchonism as a result of the thirty grains of quinine. The temperature showed a morning remission of 1° F. He had during the night six liquid stools of a greenish black color. By evening the temperature had again reached 104⅘°. Cold sponging was frequently resorted to, much to the comfort of the patient. The quinine was repeated at night, and again only cinchonism manifested itself as a result. The thermometer showed no morning remission. The following night we decided to give forty grains of quinine in divided doses of twenty grains each; only one dose was given, as depression of the heart's action, accompanied by dyspnœa, followed its administration. The temperature remained the same. I was satisfied that we had excluded a possible malarial element and were dealing with an unquestionable case of typhoid fever. By this time the typhoid symptoms were quite well marked. The temperature was characteristic; the stools were frequent and of a typhoid character; there was moderate tympanitis; an enlarged spleen; well-defined bronchitis; a tremulous tongue, and "facies" unmistakable. The eruption, which was absent at the time, occurred later. The further use of quinine was abandoned, for in our experience, as an antipyretic agent in typhoid fever it is useless. I have repeatedly employed it in a large number of cases of typhoid fever in hospital practice with the prime object in view of testing its efficacy as an antipyretic agent, and can positively state that in no single instance have I ever seen it reduce temperature. In all cases when it did so act, an unmistakable malarial element has been proven to exist. From this time on for several days we resorted mainly to the use of cold to partially control the temperature.

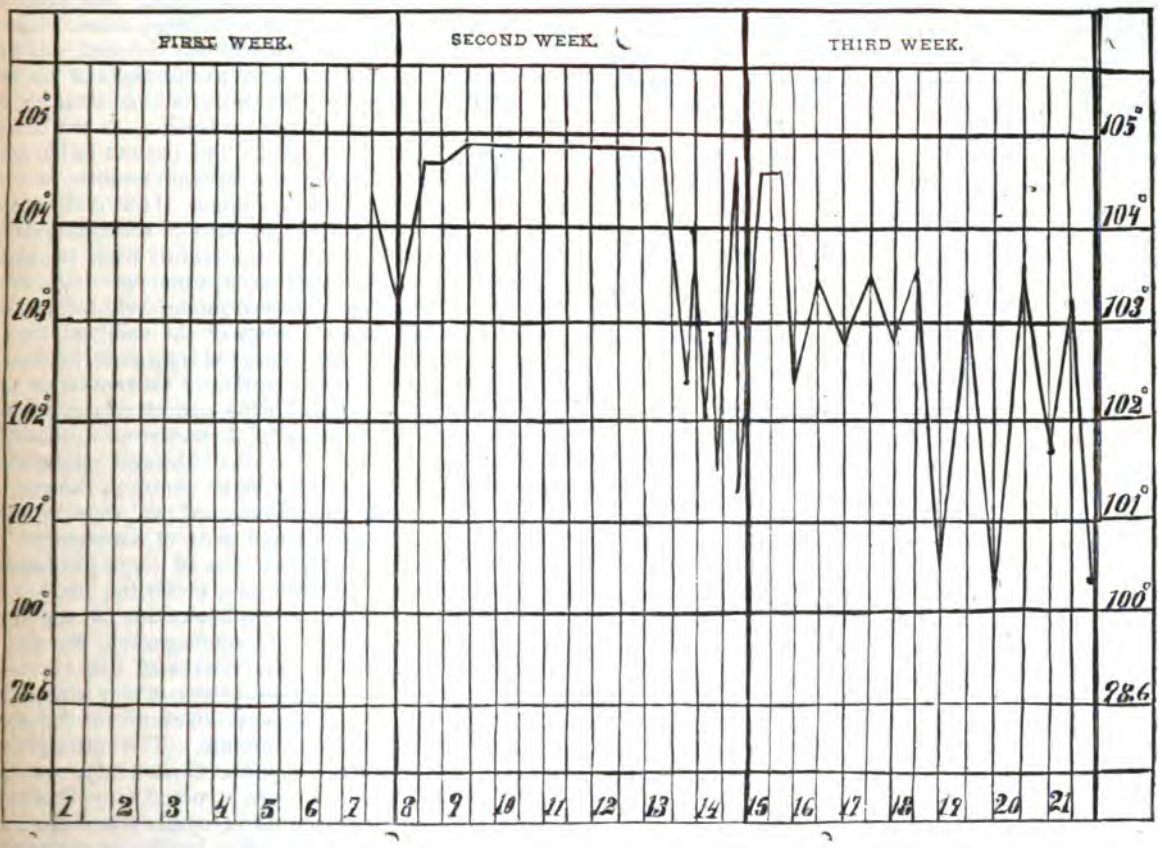
The latter had become the continuous temperature of the second week (104⅘°), but without any morning remission. The patient began to show the result of this high temperature by delirium, and marked subsultus tendinum. It was evident that unless the temperature could be controlled the prognosis was rendered correspondingly more grave. We decided to try the efficacy of antifebrin, a new remedy which had been discovered in Germany, and for which much was claimed as an antipyretic agent. It was especially claimed that it had no depressing effect upon the heart, herein a superiority over antipyrin, and, unlike that drug, surrounded by no mystery, and its chemical composition barred by no seal from the knowledge of the profession.

The attention of the profession was first called to antifebrin by Drs. A. Cahn and P. Hepp, assistants at Kussmaul's clinic, in Strassburg, in an article which appeared in the *Centralblatt für Klinische Medicin*, No. 33, of August 14, 1886. Antifebrin is chemically designated as an acetanilid, and has the formula $C_6H_5NHC_2H_3O$. It is a clear, white, crystalline substance, odorless, nearly insoluble in cold water, slightly soluble in warm water, and freely soluble in alcohol and alcoholic solutions. Drs. Cahn and Hepp report, as a result of their experimentation, that relatively large doses can be given to animals without producing any poisonous effects, and that the normal temperature is not affected by its use. They used it in twenty-four cases where high temperature predominated, including typhoid fever, erysipelas, rheumatism, and septicæmia, and report that in every instance they were successful in reducing the temperature without any disagreeable effects following. In no case was it found necessary to give more than thirty grains during twenty-four hours.

Hand-in-hand with the temperature fall was noticed a *diminished frequency* of the pulse-rate, accompanied by increased arterial tension, the latter founded upon carefully taken sphygmographic tracings. No nausea, vomiting, or diarrhœa followed the use of the drug. It is interesting to know how the drug acts. The antipyretics heretofore known are either phenols (carbolic acid, salicylic acid, etc.), or they are bases, and belong to the chinolin

series (chinin, thallin, etc.), while here for the first time we are dealing with an indifferent substance which in composition is widely separated from the others. For further information the reader is referred to the original article. I obtained some antifebrin from Fraser & Co., 208 Fifth Avenue, and ordered four grains to be administered at 4 P.M., 7 P.M., and 10 P.M., respectively, in the evening of November 5th, the twelfth day of the disease, with the following result: The temperature at the time of giving the first dose was 104⅘°, pulse 115. Half an hour after administering the second dose the patient began to perspire profusely, and at eight o'clock *the temperature had fallen to* 102½°. The pulse had not varied in frequency, but its tension had slightly increased. The reduction of the temperature was attended by an amelioration of the symptoms. The mind became clear and the patient conversed rationally. At ten o'clock the temperature had reached 104°, and another dose of four grains was given, with a repetition of what followed the second dose, viz., the temperature falling to 102°, accompanied by copious perspiration, and no perceptible bad effect upon the heart. The temperature began to rise again at midnight, and at 3.30 A.M. had reached 103⅗°. Four grains of antifebrin were given, and exactly at the end of thirty minutes there was profuse perspiration, accompanied by a fall of temperature which at 5.30 A.M. *was only* 101⅘°. At 3.15 P.M. the temperature was 104⅘°, pulse 115; and another dose of antifebrin was given. Mark again the result: At 4.30 the temperature was 101⅘°, pulse 95, with tension improved; by midnight temperature was 104⅘°, pulse 120. Wishing to exclude a possible coincidence in the reduction of temperature and the administration of the antifebrin, we resolved again to try quinine in large doses and gave fifteen grains, repeating same in four hours. No effect upon the fever followed its use. The mind, which had been clear as a result of keeping the temperature low, again became clouded, accompanied by low muttering delirium, subsultus tendinum, and an evident deepening of all the typhoid symptoms. Antifebrin was now given, and in two hours the temperature had dropped to 101⅘°, accompanied by profuse perspiration, subsidence of the delirium, and a return to consciousness. Twice now had we administered antifebrin to our delirious patient, a delirium which quinine had seemed to deepen, and as many times we were met with a rapid return to consciousness. After this the temperature was not allowed to go above 103°, and the mind remained clear.

On November 10th, the seventeenth day of the disease, there seemed to be a morning remission, and antifebrin was discontinued. I may state here that at no time had we found it necessary to give more than twenty grains during twenty-four hours. Stimulants were used sparingly, the character of the pulse, which was dicrotic, being made our guide for their use. With the morning of November 11th came again a morning remission. The case seemed now to be progressing favorably through the close of the third week, and we congratulated ourselves upon having warded off one of the worst elements of typhoid fever, high temperature, and its retinue of complications. The first sound of the heart was good.



Everything progressed favorably up to the afternoon of the 14th, when, after a stool, our patient was seized with violent abdominal cramps, followed by profound collapse, out of which it was impossible to rally him, and he died during the afternoon of the following day. The collapse appeared to be due to intestinal perforation.

The reader will, doubtless, ask himself what we asked ourselves—was this collapse in any way traceable to the action of the drug? Let us see. Five days had elapsed between the discontinuance of the antifebrin (no further indication for its use seeming necessary) and the fatal collapse. During this time convalescence appeared unquestionably to be establishing itself. Dr. Bishop, who had watched his son so faithfully, who had noted and carefully recorded every change in the pulse, temperature, mind, etc., while sorely grieved at the death of his son, agreed fully with Dr. Douglas and myself that the action of the antifebrin had been simply wonderful, and that no possible relationship could be established between its use and the fatal result. We had reduced a fever which had been continuous for one week, and, as

the record shows, would have remained continuous for nearly one week longer. This had been accomplished without any apparent depression, and our patient carried along with a clear mind. Had we not bridged a dangerous period?

During the course of the disease there were two complications, to which I will merely allude: 1. A bronchitis so profuse that at times it threatened to seriously affect the progress of the disease, and from time to time moderate counter-irritation was resorted to, and internally small doses of carbonate of ammonia were given. 2. An intestinal hemorrhage the seventeenth day of the disease, the patient passing about one ounce of arterial blood. This hemorrhage was controlled and did not recur. These complications, together with a continuous high temperature during the second and third weeks, which showed *no tendency to a morning remission*, indicate the malignant nature of the poison with which we were dealing. I have purposely deferred entering more into detail, such as giving the character of the pulse and respiration from day to day, number of stools, etc., confining myself principally to the character of the fever and the effect of the antipyretic agent employed. I have endeavored to give a truthful description of the same without exaggerating a single incident, and I feel assured that Dr. Bishop and Dr. Douglas will corroborate the statements I have made.

The effect we met with is doubtless too flattering to expect in all cases where antifebrin is used. Its value and place in our materia medica will soon be determined and its level reached. If in it we find, as it promises, a safe and certain antipyretic, we can say indeed with the ones who originally called the attention of the profession to it, "*Ein glücklicher Zufall hat uns ein Präparat in die Hand gespielt, au dem wir ausgezeichnete antipyretische Wirkungen entdeckten.*"

"GRASS STAGGERS."—Dr. J. W. Carhart, of Lampasas, Tex., writes: "I notice, under the above caption, an item in THE MEDICAL RECORD, of October 23, 1886, referring to an article in the *Cornhill Magazine* on cowboys in Texas, in which there is a statement with reference to the poisonous effects of what is known in Northwest Texas as the loco weed. Having spent a year and a half in that portion of Texas lying between the Indian Territory and New Mexico, and known as the Panhandle, I am familiar with the weed so well described in the *Cornhill Magazine*, and with its effects on horses. Cattle occasionally eat it, but are rarely affected by it. I never knew mules to suffer from it, but cow-ponies are destroyed by it every year in that country by the thousand from eating the weed. When they have once acquired a taste for it, they will leave fresh, green grass to hunt and eat the loco weed. They break down very rapidly under its effects. They at first fall away in flesh, the hair assumes a dead and dirty appearance. They soon become weak and staggering, and if they continue to eat it they become, in cow-boy parlance, 'plumb fools.' They are often perfectly crazy. A gentle tap of the hand on the top of the head of a 'locoed' horse will cause him to stagger, rear, and fall backward. Vision is impaired, and there is an evident loss of muscular coordination. The Indians say that the effect of the weed is due to an insect infesting it. But I have examined specimens under a powerful glass, and found no insect. I made a decoction of the plant and drank it without apparent effect. I gave the decoction to 'locoed' horses and it had a beneficial effect, on the principle, I suppose, of *similia similibus curantur*, but could not keep them sufficiently long under observation to prove a cure. There can be no doubt about the abundance of the weed in certain regions of the West, or of its effects. The ergot of smutty corn produces blind staggers in horses, from the constricting effect on the blood vessels of the brain. The objective symptoms of loco-poisoning are similar."

A CASE OF MIXED ROUND- AND SPINDLE-CELLED SARCOMA OF RETRO-PERITONEAL GLANDS, CORDA EQUINA, NERVE-ROOTS, DURA OF SPINE AND BRAIN, PONS, MEDULLA AND CORPORA STRIATA.[1]

BY RICHARD VAN SANTVOORD, M.D.,

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K. B——, a woman aged thirty-four, was admitted to the Randall's Island Hospital, September 8, 1886. She was apathetic and not able to give a very good account of her previous history or present sufferings. It was learned, however, that she had suffered from pain in her right lower extremity. On admission she complained of intense pain in the left lower extremity. She was unable to define its character, nor did it seem to follow any definite nerve-distribution. The left leg was slightly smaller than the right, the thigh being one inch less in circumference. No anæsthesia was present. Reflexes, electrical reactions, and strength were not tested. The patient could, however, move her legs. She complained also of abdominal pain. A firm, large mass, whose outlines could not be very accurately defined, was found, presenting a little above and to the right of the umbilicus and separated by a line of resonance from the liver. It was more or less distinct according as the intestines were less or more distended. The patient failed rapidly. Four days before death she became unable to use her legs and could not pass her urine. Her mental apathy had become so great that no tests of sensibility could be relied on. Death resulted apparently from the pressure effects of the abdominal tumor, nineteen days after admission. The autopsy showed moderately-firm, wart-like growths on the inner surface of the cerebral dura, one about the size of a large pea in the right anterior fossa, two smaller ones on the under surface of the tentorium at each outer angle, and one about the size of a large pea over the body of the sphenoid, obviously compressing the pons. The cerebral arachnoid showed slight chronic thickening. In each lenticular nucleus was a small growth, the size of a medium-sized pea, that in the right being surrounded by a small area of softening. There were two growths, about the size of large pin-heads, on the anterior surface of the pons, under the pia. A similar growth existed on the surface of one of the anterior pyramids of the medulla. A small growth, the size of a buckshot, was found on the surface of the cerebellum. It was apparently a fragment of one of the tumors of the tentorium which had become adherent to the pia and been cut off in removing the brain. The roots of several of the cervical nerves, and, more prominently, some in the dorsal part of the cord, were involved in yellowish-gray infiltration from their points of egress from the dura to where they had been cut off. In the corda equina of the left side, within the dura, the nerves were involved in a firm, irregular mass about the size of a plum pit. A smaller mass similarly involved some of the nerves on the right side. At point of egress from the dura these nerves were thickened and yellowish on section. The left sciatic was removed from its point of egress from the sacral foramina to the knee. The induration extended to the junction of the roots, but could not be detected lower down. A pea-sized outgrowth projected from the dura over the middle of the anterior surface of the cord. The pia of the cord showed recent fibrinous exudation. Opposite the outgrowth from the dura the cord was very soft. The greater part of the cord below and for some distance above this point was also abnormally soft. A wedge-shaped section sawed from the lumbar vertebræ, and the opened spinal canal, were examined in vain for evidences of morbid growth. The posterior surface of the sacral canal looked slightly eroded and was coated with fibrinous material. The lungs

[1] Read before the Section in Neurology of the Academy of Medicine, November 12, 1886.

were œdematous and slightly adherent. The heart was small and brownish; slight atheroma of aorta. Two or three small yellow nodules were found in the liver. On the under surface of the right lobe was a yellowish mass, size of a walnut, filled with yellow pasty matter, containing hydatid hooklets and convoluted cyst-walls. A large mass, size of a cocoanut, was found behind the peritoneum, extending a little more to the right than to the left of the median line. Its anterior fifth was a cyst, with irregular walls, containing clear yellowish fluid and translucent yellowish coagula. The body of the tumor was made up of firm whitish tissue.

The kidneys and intestines presented no noteworthy lesions.

The microscope showed that the retro-peritoneal tumor consisted of lymphoid and spindle-cells, with an intermixture of large round cells. It also included some fat which was infiltrated with lymphoid cells. A nerve-root with adjacent dura showed infiltration with round cells in the dura and irregularly through the nerve-root, but most marked at its periphery. A few spindle-cells were also seen, and some irregular dilatation of the vessels. One of the tumors of the dura was found to be made up almost entirely of lymphoid cells, the spindle- and large round-cell element being very slight.

This case seemed to me worthy of presentation on account of the large number, and very unusual distribution, of the neoplasms. The primary growth was probably the retro-peritoneal, judging from its size. According to Virchow, primary retro-peritoneal sarcoma is usually single, its injurious effects being produced only by pressure. Sarcomata of the dura are, according to the same authority, usually single, though occasionally two or more are found. They are usually spindle-celled.

Under the head of neuroma Virchow describes several cases in which there have been multiple tumors of nerve-roots, and as several of these were old, imperfectly reported cases, it seems possible that they may have been sarcomata. I have failed to find any undoubted case of multiple sarcomata of the nerve-roots. In *Brain*, for January, 1886, Dr. S. Harris reports a case of spindle-celled sarcoma of the corda equina, substance of the cord and medulla, with secondary growths in the pleuræ and pericardium. In multiplicity of growths this case is the nearest approach to my own that I have found, it being apparently true, as a general rule, that sarcomata of the nervous system are single.

The marked pain with atrophy in the left leg, together with a new-growth in the abdomen, lead me to suppose that the case was one of so-called paraplegia dolorosa, caused by pressure from new-growth in the vertebræ. As such pressure frequently results from neoplasms narrowing the vertebral foramina, a complete examination calls for the entire removal of the vertebræ, a procedure which, for prudential reasons, I did not care to undertake in this case. The tumors in the corda equina, however, seemed to account for the symptoms complained of, and the absence of disease in the vertebral bodies and surface of the spinal canal seemed sufficient to exclude disease of the bone.

Although sarcomata of the vertebræ occur, and may give rise to pressure upon the cord or nerves, yet they seem to be quite rare. Dr. Marcoe, however, in his work on diseases of the bones, records a case of spinal paralysis caused by pressure from a "spindle-celled fibroid" growing from a transverse process of one of the cervical vertebræ, which was cured by operation. Dr. Frank Ferguson mentioned to me a case which he had recently seen, in which a sarcomatous growth from the body of a vertebra had caused pressure on the cord, the case clinically having been regarded as depending on some lesion situated in the cord itself.

Judging from a somewhat imperfect review of the literature of the subject, it would seem, however, to be true that lesions of the spinal cord were more often, in the case of sarcomata, caused by tumors of the cord itself or its membranes than by outgrowths from the vertebræ, the reverse being true of sarcomata.

20 EAST 125TH STREET.

NOTES ON A CASE OF PERIPACHYMENINGITIS SPINALIS.

BY WILLARD H. MORSE, M.D.,

WESTFIELD, N. J.

PERIPACHYMENINGITIS SPINALIS is a disease of rare and serious occurrence. In looking diligently into the bibliography of the subject, I find but eight cases of this malady on record in either America or Europe. Of these eight cases, John Simon reported one, in 1855, in the "Transactions of the London Pathological Society" for that year; Traube reported two, in 1863, before the Medical Society of Berlin; Professor Mannkopf, in the following year, wrote of another case in the *Berliner Medicinische Wochenschrift;* Mueller, in 1868, gave an elaborate description of a case in a work which he issued at Königsberg, entitled "Ueber Peripachymeningitis Spinalis;" the *Klinik der Rueckenmarkskrankheiten* for July, 1876 (if I mistake not), contained a dissertation on a case, which, though from the pen of the elder Leyden, is very fragmentary and incomplete; the same authority, however, in the *Berliner Klinische Wochenschrift* for December 17, 1877, reports his second case, and in his paper makes further reference to the first; and, lastly, Dr. L. Putzel, of New York, reports a case in THE MEDICAL RECORD for January 26, 1878.

In taking these cases in review, I find some very interesting details. That reported by John Simon followed a spinal fracture, and among the several autopsical appearances revealed by the scalpel of that eminent observer were two abscesses at points outside of the spinal canal, and connecting with it through the intervertebral foramina, a fact held in proof that the abscess formations, occurring prior to the perimeningeal inflammation, were causative of it, and stood revealed in the presence of a deposit of pus along the whole length of the cord beneath the dura mater. Mannkopf's case had to do with a similar expression of etiology, though instead of abscesses the primary lesion was a deep-seated inflammation in the tracheal muscles, extending thence backward into the connective tissue between the dura mater and the first two dorsal vertebræ, where, on the left side, posteriorly, a tumor pressed upon the spinal cord, upon which it exerted no abnormal effect other than that caused by the item of pressure. Mueller's case was also one of extraneous origin, the primary seat of inflammation having been a subpleural sarcoma, from which the morbid action passed outward through an intervertebral foramen into the perimeningeal connective tissue. Of Leyden's two cases the first was manifestly due to an abscess near the left anterior superior spinous process of the ilium, and the second was brought about by an injury to the spine and left shoulder, eventuating in paraplegia and death. The post-mortem in the latter case showed a thick mass of exudation, compressing the cord to such an extent as to cause myelitis, extending from the third to the tenth dorsal vertebra, and entirely surrounding the dura mater. Dr. Putzel's patient dated his malady from a deep abscess of the neck, and after an experience of paralysis, hyperæsthesia, and abscesses, finally entirely recovered. These six cases were all secondary to inflammation outside of the spinal canal; but in Traube's cases there was in both instances that which evidently pointed to the primary development of the meningeal affection. In these cases the distinguished German pathologist noted the development of many minute abscesses in the deep spinal muscles some time subsequent to the pronounced primary development of the meningeal affection. To which of these categories belongs the case which I have to report is, to my mind, somewhat uncertain.

The patient was, at the time when he first came under my observation, a young man with a history that told emphatically of an hereditary and an acquired tendency to nervous diseases. Both of his grandfathers had died of apoplexy, one grandmother had been a long-time sufferer from melancholia, his mother was a paralytic, and during the time that he was under my care his father died of an apoplectic seizure. From infancy a weakly boy, he was possessed of a brilliant intellect, and at nineteen graduated from college. Six weeks later his physicians took him from his books and sent him to the Adirondacks, advising him that in their opinion a summer's vacation was needed to rid him of frequent attacks of headache, which they feared might terminate in an accession of his unfortunate grandmother's mental malady.

While in the woods he was exposed to a cold rain, and some nine hours after this exposure he began to suffer from a severe pain in his neck, on the right side. This soon extended into the upper dorsal regions. Upon his return from the woods his attendant put him under treatment for "torticollis." Failing of relief he came to me, when, upon examination, a swelling was found on the neck, on the right side. A diagnosis of deep-seated abscess of the neck was made, and decided febrile action was soon noticed. For three weeks he suffered from severe pain in the affected part, and at the end of the fourth week he suddenly became almost completely paralyzed on the corresponding side of the body. For nine days succeeding there was no change, but at the end of that time formication and tingling ensued, and under treatment by local faradization the condition of paralysis gradually gave way, disappearing almost entirely in the January following, fully five months after the initial treatment. Meanwhile the swelling in the neck had become reduced to a small indurated mass, but slightly sensitive to pressure. Before spring even this was overcome, and the paralysis having passed, the patient made a complete recovery. To my certain knowledge he was in a state of perfect health for three years following, having no return of the symptoms, and expressing himself as being in better health than ever before. Entering the bar, he became known as a rising lawyer. Marrying, he became the father of a promising son.

At the end of last October he presented himself for treatment for a series of cerebral and spinal symptoms, notably headache, vertigo, and insomnia, together with great muscular weakness of the back. It was the first trace of ill-health that he had had for thirty-four months, and, so far as could be ascertained, it was not referable to any apparent cause, unless something in the way of an abuse of alcohol had to do with it. These symptoms continued, without febrile motion, paralysis, or convulsions, and pointed, though imperfectly, to either cerebritis or meningitis. On the fifth day an attack of prolonged somnolency occurred, and as soon as this was in some degree obviated the patient began to complain of a feeling in the dorsal region which he characterized as "the pricking of many needles." An examination revealed several (eleven) swellings in various places in the right rhomboideus, which were hard, circumscribed, and immovable, but exquisitely tender to the touch. One of these, of a particularly painful character, was situated just at the level of the second dorsal vertebra, and as the patient complained of it more especially, it was opened, and discharged a small amount of dark, offensive pus. The next day two of the other abscesses were opened, one of these discharging a small piece of bone. Immediately upon this occurrence a convulsion took place, continuing forty seconds. Subsidence of movement and general relaxation ensued, a lateral jactitation of the head began, and three further convulsions followed. After the third of these the patient became quiet and unconscious. A condition of coma was the instant sequel, and after continuing ten hours there was a slight spasm, and death took place, the pulse having suffered no variation at any time in the final sixty hours of life.

Autopsy, forty-eight hours after death. Body extremely emaciated and exsanguinated, though a considerable thickness of fat still remained over the abdominal walls. On dividing the skin and subcutaneous fat over the spinous processes of the dorsal vertebræ, and especially on lifting the muscles from the sides of these processes, a sinus was discovered extending upward from one of the opened abscesses five and one-half inches along the course of the spinal column. In the neighboring deep muscles there were many minute abscess formations, but no other sinus than the one indicated. Surrounding the dura mater there was a mass about three and two-thirds millimetres in thickness, extending from the point of the opening of the sinus to the tenth dorsal vertebra. The color, appearance, and general condition of the dura mater, the pia mater, and the cord were perfectly normal, except that the latter exhibited evidences of having undergone compression, but not to such an extent as to indicate even a commencing condition of myelitis. Between the muscles and large nerve-trunks the loose tissue showed an acute inflammatory process.

That this case evidenced peripachymeningitis spinalis rather than simple spinal meningitis had been shown during life from the conspicuous absence of some of the leading symptoms of the last-named disease, notably cephalalgia, spinal rigidity, and reflex excitability. The autopsy sustained this view.

The facts in the case which are of an especial interest relate to the course of the disease, and in such relation mark it as rare. Although impossible to determine the precise etiological connection between the two trains of circumstances, it is quite evident that in the first instance the meningeal inflammation and consequent spinal hemiplegia were secondary to the action of muscular in flammation, and that in the second instance this was precisely reversed. The inflammation in the external tissues was an incident that antedated the spinal affection; but the discharge of a piece of bone from the fistula, that was discovered post mortem, is in the way of evidence, in connection with other clinical events, to point to an origin of apparently primary spinal affection. This, however, is not positively certain.

THE QUESTION OF PRIORITY IN CIRCUMCISION UNDER COCAINE.—Dr. W. C. Fisher, of Galveston, Texas, writes: "Dr. B. F. Kingsley, of San Antonio, Tex., refers, in a recent number of THE MEDICAL RECORD, to a case reported some time since by Dr. E. R. Palmer, and says that he operated on November 29, 1885, and makes the claim to priority in the use of cocaine in circumcision. I have no desire whatever to take the wind out of the doctor's sails, but if he will refer to the November number of the *Texas Courier-Record*, page 98, he will find an article entitled, 'A Few Clinical Observations on the Use of Cocaine in Circumcision and Ablation of the Toe-Nail.' By reference to my notes I find that the cases reported were operated on on the following dates: First, April 3, 1885; second, May 18, 1885; third, May 25, 1885; fourth, July 20, 1885; fifth, July 20, 1885; sixth, July 23, 1885; seventh, August 3, 1885. Since the report of these cases I have performed a good many more circumcisions under cocaine, and generally with good results. Intead of a rubber bandage, I find that a simple rubber band, such as we use around a pocket-book, answers every purpose. I do not claim that I was the first to use cocaine in circumcision, for I believe two other gentlemen used it once or twice before I did."

AN EASY LABOR.—Dr. S. C. Bridgwater, of Dixon Springs, Tenn., writes that not long ago a negro woman was walking along one of the streets of that town, when suddenly labor pains began, and before she could get out of town she gave birth to a large, healthy child. She picked up the baby, and carried it in her apron about half a mile to her home. She had no medical attendance during or after the labor, and both mother and child did well.

Progress of Medical Science.

MAMMARY ABSCESS.—Dr. Bumm has recently made suppurative inflammation of the mammary glands the subject of special inquiry, and has published his views in No. 282 of *Volkmann's Sammlung Klinischer Vorträge*. A good *résumé* of these views is found in an editorial article in the *Philadelphia Medical Times* of October 16, 1886. Dr. Bumm points out the fact that the frequency of the mammary abscess is so much greater during the periods of functional activity of the glands, that it may be practically regarded as a disease of lactation. He refers cases of this affection, as it occurs in lying-in and nursing women, and occasionally also during pregnancy, to two groups, differing in causation as well as in their course and termination: 1, Simple parenchymatous (non-infectious), and 2, phlegmonous (infectious) mastitis. 1. Simple or non-infectious mastitis is due to the accumulation and retention of the newly formed secretion, and differs in degree only from that physiological fulness and tension which are felt in the breasts upon the second or third day after parturition. The mammæ, being but poorly supplied with intrinsic contractile elements, and wholly lacking the influence of extrinsic muscles, are less favorably arranged than the other glands of the body for the discharge of their secretions. They are dependent upon the aid of the suckling or, in its absence, of the breast-pump. If this aid be deficient, the retention which follows may cause local and general disturbances that are, especially in women of irritable, nervous organization, of some moment. The temperature may reach 102.8° to 104° F.; the breast is full, hard, and painful; red streaks extending in the direction of the axilla may indicate inflammation of the lymphatics. But the tendency after massage and suction is to dispersion and resolution, and only exceptionally is there necessity for evacuation by an incision through the skin. Even then the discharge is not pus, but milk in process of inspissation and disintegration of the globules, and, with the rare exceptions, it is free from bacteria. Here we have the familiar "weed" of the old nurses. 2. But in phlegmonous or infective mastitis we have a very different and much more troublesome affection to deal with. The line of separation between the two conditions is sharply defined. In fact, they have nothing in common, except the same anatomical seat, nor can there be any question as to the development of the graver out of the milder malady. Phlegmonous mastitis occurs more than twice as frequently in primiparæ as in multiparæ; much more frequently in women who are nursing than in those who are not. It begins, in by far the greater number of cases, in the course of the first month after accouchement; lesions of the nipple usually precede it; and, finally, a part only of the breast is commonly implicated at first, and that part is usually the undermost, or the under and outer part. Errors in diet, colds, worry, mechanical irritation, are, singly or together, quite incapable of causing this form of inflammation. It is due to the presence of specific pyogenic microbes. These cocci are found, sometimes arranged in clusters (staphylococci), sometimes in chains (streptococci), and are to be distinguished from other microbes of similar form by the peculiar appearance of their pure culture and by their active growth, while the energy with which they take up and retain aniline dyes renders their study in the tissues comparatively easy. The distribution of these organisms is so wide and abundant that their contact with the nipples is almost unavoidable. Any want of the most thorough cleanliness, any abrasion, maceration, or loss of epithelium, opens the way for the infection of the deeper structures of the breasts. And it is here that the long-recognized relation between lesions of the nipple and phlegmon of the breast finds its explanation. The disproportionate frequency of the latter affection in primiparæ is also made clear when we consider their greater obvious liability to nipple-lesions. The invasion may be subcutaneous, and, by way of the lymph-vessels, deeply into the interstitial connective tissue of the gland, or much more commonly it is by way of the milk-ducts directly into the parenchyma. Infection once set up, milk-retention, by widening the ways of access to the deeper parts, favors the extension of the pyogenic inflammation. The positive knowledge of the etiology and true pathology of phlegmonous mastitis gained by bacteriological studies has less bearing perhaps upon the treatment, which must still be conducted in accordance with accepted surgical procedures, than upon prophylaxis. The hardening of the surface of the nipples by daily bathing with cold water and gentle frictions during the later months of pregnancy, and their systematic bathing after nursing, long advised by cautious midwives, have now more than a mere empirical basis. To avoid all maceration, and guard them by vaseline or oil, while yet sound, and to heal without delay each fissure or abrasion so soon as it appears, are measures no longer to be lightly neglected. "Sore" or "cracked" nipples are troublesome enough in themselves: in the light of their relation to "gathered breast" they acquire a new and serious importance.

AN OVERDOSE OF COCAINE.—Grave symptoms due to acute intoxication from the hypodermatic use of cocaine have not hitherto been frequently observed. Dr. Ramsden places on record, in the *Australian Medical Gazette*, the following case: B. C—— had been suffering from neuralgia caused by a defective tooth. It was decided to extract the offending tooth. This was found to be impracticable and an injection of cocaine (ten per cent. solution) was then given. The patient found immediate relief, lasting a number of hours. Dr. Ramsden then continues as follows: "Next day, the pain being very severe, he sent to his chemist for a similar solution, and had three minims injected, but without the desired effect; he returned it to the chemist and asked him "to make it stronger," which he did, making it twenty per cent. He brought this to me, but omitted to tell me that the solution was double the strength of that which I had used. He told me that three minims had not given him the relief that he had experienced from mine; I therefore gave him four minims of what I believed to be a ten per cent. solution, and within five minutes he became restless and inclined to vomit; he then began to feel a sensation of pins and needles in the left hand and arm, which rapidly extended to the right side. This was speedily followed by contraction and rigidlty of the fingers, arms, and legs; there was also a tendency to opisthotonus. His pulse became extremely rapid and feeble, his face livid, and the muscles of his mouth and cheeks strongly contracted. His respirations were short and convulsive, his feet and hands very shortly became cold, and a profuse perspiration broke out on his head and face. I first gave him half a tumbler of brandy, followed at short intervals by drachm doses of spiritus ammoniæ aromatici, and applied strong mustard over the cardiac region, and used friction to the upper and lower extremities; at the same time I let him inhale a few drops of chloroform to try and check the spasmodic contractions. After continuing these remedies for nearly an hour the pulse began to improve, the color to return to the face, and the rigidity of the muscles lessened, but returned again immediately I stopped the friction. At the end of two hours he improved more rapidly, but felt somewhat drowsy, and it was not until about four or five hours that all the symptoms had subsided. On questioning him afterward regarding his sensations, he told me that although he was unable to speak coherently he knew all that was passing, and it was not until he felt the abdominal muscles becoming rigid that he felt anxious, for then he thought he was dying, and a sensation of suffocation came over him."

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ARSENIC IN SKIN DISEASES.

IN July last the editor of the *Journal of Cutaneous and Venereal Diseases*, through the pages of his own and other medical journals, requested information from physicians in relation to the general practice of employing arsenic in skin diseases, its superior value to other remedies in this class of affections, its ill effects, the preparations of the drug preferred, the doses employed, etc.

In response to these inquiries about seventy communications were received. The information contained in many of them was so meagre and indefinite as to be practically valueless. Many of the correspondents were non-committal, or expressed themselves in such general terms that their real opinions upon the points specified were largely conjectural. An analysis of the letters in which the answers were for the most part categorical, and contained definitely expressed views, based upon personal experience, shows the following result:

In answer to the question, "Are you in the habit of employing arsenic *generally* in the treatment of diseases of the skin?" in over sixty per cent. the answer was "Yes," in some cases qualified by the terms "largely," "continuously," "almost exclusively," in "all scaly diseases," etc. In two or three cases it was emphasized, one correspondent declaring that he used arsenic in all cutaneous diseases non-syphilitic in origin; another, still more enthusiastic, proclaims that his practice is to give arsenic "*not only generally*," "*but invariably in every case.*" Only ten correspondents give an unqualified "*No*" to the question. A number state that they formerly used it extensively, but now have little faith in it.

From the answers to the second question, "In what forms of skin disease have you found arsenic of superior value to other remedies?" it would appear that the superior virtues of this drug shine forth most brilliantly in a large range of skin affections. The diseases enumerated are alopecia simplex, alopecia areata, acne, atrophy of nails, erythema, eczema papulosum and squamosum, psoriasis, pityriasis capitis, crusta lactea, lichen agrius, lichen ruber, urticaria acute and chronic, furunculous, herpes zoster, pemphigus, purpura, vitiligo, strophulus, prurigo, impetigo, herpes, scabies, ambustio, gelatio, various syphilodermata, and certain other diseases not recognized in the nomenclature adopted by the New York Dermatological Society. Others, instead of particularizing diseases, extol its superior value in "all scaly diseases," "in all chronic cutaneous troubles;" another "in anæmias and morbid conditions of the cutaneous glands;" still another, in all cases where there is exudation, with infiltration into the cutis vera. The homœopathic proclivities of one correspondent are disclosed in the statement that "arsenic is of superior value in all diseases indicated by the similarity of the symptoms." One correspondent somewhat scornfully repudiates the idea of a comparative estimate of the value of arsenic with other drugs. He says: "I cannot compare it with other drugs, as I never use anything but arsenic."

The third question, "What ill effects, if any, have you observed from its use?" is passed over in silence by many of the correspondents. Eighteen declare they have seen none; nineteen have observed nausea, stomachal and conjunctival troubles. Many testify that arsenic frequently aggravates cutaneous inflammation.

One correspondent states that of 197 cases treated by arsenic, there was a rebellious eruption in ten per cent.; in twenty per cent. it produced puffiness of the face and a dryness of the fauces. In one case it produced urticaria; in another erythema; in three it aggravated eczema.

To the fourth question, "What preparation of the drug do you prefer, and in what doses do you employ it?" the answers would indicate that there is a pretty general uniformity of practice in the employment of Fowler's solution—dose, one to twenty drachms three times a day. Some prefer Donovan's solution (same doses), arseniate of sodium; others arsenious acid, one-sixtieth to one-sixth grain, iodide of arsenic, bromide of arsenic, etc.

As an illustration of the variety of preparations open to the choice of the ambitious arsenicalist, I quote here the arsenical armamentarium of one correspondent: "The preparations I use are arseniate of potash, arseniate of soda, arseniate of ammonia, arseniate of quinine, Fowler's solution, Donovan's solution, De Valangin's solution, iodide of arsenic," etc.

In submitting an analysis of these communications, which embody for the most part the results of the experience of general practitioners, we are aware that there may be a question as to their practical utility. There are many circumstances, unnecessary to detail here, which detract from their positive value as a contribution to our knowledge of the subject. They certainly seem to sustain the proposition enunciated by Dr. Fox, that it is the practice of many physicians to give arsenic in nearly any case of skin disease, the truth of which assumption was challenged by some of the members of the Dermatological society at the informal discussion at its June meeting. They also establish the fact that many physicians, who formerly employed arsenic generally or indiscriminately in skin diseases, have lost faith in the drug, and now employ it only in a limited range of diseases. From this it may not be unfair to draw the conclusion that, in proportion to the widening of our knowledge and the broadening of our experience, the use of arsenic is restricted in the treatment of skin diseases.

Another point of interest is the fact that the incidental effects of the drug upon the skin occur in a notable proportion of all cases in which it is used. Quite a number of correspondents refer to its effect of increasing

cutaneous inflammation, and the production of various forms of eruptive disturbance.

The experience of Dr. Faithful, of Australia, upon this point may be quoted entire. He observed intense itching all over the body, coming on principally when the patients get into bed, with dryness of the skin and furfuraceous desquamation. In one case, herpes preputialis, which always made its appearance after giving arsenic for a few days, minim doses of Fowler's solution or liq. arsenici hydrochlorici (Br. Ph.) producing it almost as rapidly as five-minim doses given three times a day. In another case a papular eruption about the face attended with a decided amount of pruritus. The papules varied in size from a pin-point to that of a No. 4 shot, were discrete, and were more or less scaly upon the summit. The eruption disappeared after a few days upon the discontinuance of the drug, and was followed by furfuraceous desquamation of the parts affected.

PNEUMONIA AND PNEUMOCOCCI.

The science of bacteriology is yet in its infancy, and though enthusiasts are not wanting who claim that specific microbes have been discovered for nearly every disease; from cholera to bromidrosis, it can hardly be said that the specificity of any micro-organism, with the possible exception of the tubercle bacillus, has been established with absolute certainty. Some investigator will find a certain species of microbe in every case of a certain disease, and may even be able to produce apparently the same disease by inoculations of pure cultures of this microbe. He then proclaims to the world that he has discovered the specific micro-organism of this disease, and perhaps busies himself in a search after some substance which will kill the micro-organism without at the same time destroying its host. But soon another investigator appears who has found some other microbe in the same disease, and is equally certain that this is the true microbe of the disease, and that the other investigator was mistaken.

Even the pneumococcus of Friedlander, if we may trust some recent experiments of Drs. Palamidessi and Modigliano, reported in the *Rivista Internazionale di Medicina e Chirurgia* for November, 1886, is not constant in its relations of cause or accompaniment of pneumonia. These investigators have examined the sputa and the pulmonary tissue in numerous cases of pneumonia occurring in Pisa during the winter of 1885–86, and have found a micro-organism, it is true, but not the so-called pneumococcus. The microbe found by them differed in all its characteristics from the pneumococcus described by Friedlander, yet in experiments upon animals with pure cultures they were able to excite a disease possessing all the pathological appearances of pneumonia. There was always a fibrinous exudation at the seat of the injection, and the tissues, when examined later, showed an abundant infiltration with the identical micro-organisms.

They conclude, as a result of these experiments, that:

1. There may be cases of pleurisy and of pneumonia in which the diplococcus described by Friedlander is absent.

2. These cases of pleurisy and pneumonia are produced by another variety of micrococcus.

3. This micrococcus differs wholly from those forms hitherto found in these diseases.

It would therefore seem that Friedlander was mistaken, or Palamidessi and Modigliano were mistaken; or that there are varieties of pneumonia which cannot be distinguished from each other clinically; or, finally, that the specific microbe of pneumonia, if any exist, has not yet been discovered. But perhaps it is the safest to assume that bacteriology has not yet attained the level of a certain science.

THE SIGNIFICANCE OF ABSENCE OF HYDROCHLORIC ACID IN THE DIAGNOSIS OF GASTRIC DISORDERS.

Of late years several writers, chiefly in Germany, have called attention to the frequent absence of free hydrochloric acid in the contents of the stomach in carcinoma of that organ, and some have even maintained that such absence is pathognomonic of that affection. Van den Velden was among the first to note this sign, and he was also inclined to attribute to it greater diagnostic significance than were later workers in the same field. He believed that it was symptomatic not only of cancer of the stomach but of cancer in general, and asserted that it was possible to determine whether any given tumor were benign or not by the presence or absence of free hydrochloric acid in the gastric secretions. Schiller, Seemann, Kredel, Riegel, Hübner, and others have come to the same conclusions as regards carcinoma of the stomach, though their researches have shown that the absence of free hydrochloric acid is by no means constant in cancer of other organs, and, indeed, Hübner ventured in one case of cancer of the peritoneum to exclude disease of the stomach, because he found hydrochloric acid present in the contents of that organ. Riegel also asserts that the presence of this acid is sufficient evidence of the non-existence of carcinoma of the stomach, and that if, on repeated examinations, its absence is definitely determined the diagnosis of cancer may be made with safety.

These results, however, are by no means confirmed by other observers. Ewald found hydrochloric acid in the contents of the stomach, in 13 out of 23 cases of cancer of this organ, though in a later series of 7 cases he found free acid present only once, and that in a doubtful case. Golding Bird found a large amount in the fluid vomited in a case of scirrhus of the pylorus, although later in the disease the acid nearly disappeared.

Dr. Luigi Sansoni has recently made a number of observations in this direction (*Rivista Clinica*, No. 10, 1886), the results of which are not devoid of interest. He examined the contents of the stomach in four cases of cancer at different periods, before and after the ingestion of food, and was unable at any time to find any traces of free hydrochloric acid. He made in all 86 analyses of the gastric secretions in 35 individuals, and noticed the curious fact that in men hydrochloric acid was always present, except in those suffering from carcinoma, while in women it was frequently absent. Of 61 analyses made in 27 women, hydrochloric acid was absent fifty times. Of these analyses, the larger number

(36) were in hysterical women, and only once was free acid found, and then only in very small quantity. He thought that this absence might justly be attributed to nervous disturbances, and instanced in support of this view the alterations in other secretions, such as the sweat, urine, saliva, etc., as often observed in hysterical women. The absence of free acid in other, non-hysterical, women might be attributed to the sedentary lives which they lead. By reason of the small amount of exercise which they take, the food remains longer in the stomach, and the albuminous solutions, peptones, etc., seize upon the acid, so that it is no longer free and fails to give the characteristic reactions.

As a result of his observations the author concludes that a chemical analysis of the contents of the stomach is often of great value in the diagnosis of gastric disorders, and that, while the absence of free hydrochloric acid is by no means pathognomonic of carcinoma of the stomach, still less of cancer of other organs, it is, nevertheless, taken in connection with other symptoms, a sign of much importance and one which goes far to establish the diagnosis of cancer in doubtful cases.

FATTY HEART.

PROBABLY no disease sounds by name to the laity more terrible than fatty heart. That it is a well-recognized clinical condition, no one doubts. That physicians use the expression somewhat carelessly, is none the less true. It is possible for a person to have a fatty condition of the cardiac muscle and yet completely recover, as far as we can judge from his subsequent history. The expression —fatty heart—is one which should not be used carelessly by medical attendants. Often patients get wrong and distorted ideas of their own maladies, and are thrown into a condition of despair and anxiety, from which they might easily have been free.

In a recent issue of the *Edinburgh Medical Review*, Dr. Milner Fothergill makes a sensible protest against the indiscriminate use of the term under discussion, and shows conclusively how a process, generally pathological, may be, under certain conditions, almost normal, and far from conveying an inference of permanent structural damage. In the uterus of the puerperal woman the process of fatty degeneration is the one by which the organ is restored to its normal state. After a continued fever the heart itself shows evidence of fatty changes, but they are only temporary. With the return of health these cardiac changes disappear, and the normal tonicity of the organ is restored. So also in anæmia, similar changes result. The heart-walls are weakened and the valvular orifices relaxed. There results a temporary incompetence at the valves, and another cause of murmurs is added to that of the watery condition of the blood. A proper course of tonic treatment removes all this. Repeated hemorrhages induce the same condition, which is produced also artificially in animals by repeated venesection.

All these facts go to show that the condition of fatty heart is not necessarily an incurable or positively dangerous one. This latter element must be determined by the causative factors. Patients are told they have fatty heart, and this statement they often regard as their death-warrant. They live, however, to disprove the prognosis of their advisers. If there are other signs of cardiac trouble—changes in vessel-walls, evidences of imperfect circulatory changes, and so on—then the prognosis is grave indeed. But we should not apply the term "fatty heart" indiscriminately, with its general clinical significance, to all those conditions where there may be but slight cardiac changes.

THE HISTORY OF MASSAGE.

A RECENT work has for its title the "History of Massage." Its author is Dr. Hünerfauth, of Homberg. Its salient features have been rendered accessible to English readers by a contribution to the *Nineteenth Century* from the pen of a woman—Lady John Manners. We learn that the word "massage" comes from a Greek word, meaning to rub, or more directly from an Arabic term "mass," that is, to press softly. There is trustworthy evidence to show that the process was known to the ancients, and was practised by them as a therapeutic measure. It has long formed a part of the hygienic gymnastics of the natives of India. "Before the Indians begin their exercises, they cower on the earth and by turns rub each other with the mud from the delta of the Ganges when they can obtain it. All the muscles of their bodies are pressed and kneaded. When Indians are unwell, they frequently employ a cure called 'chamboning;' the whole of the patient's body is gently kneaded, beginning with the upper extremities, and descending to the feet."

Records of travellers show that it is practised in nearly all the islands of the Indian and Pacific Oceans. At the Sandwich Islands it is known as Lomi-Lomi, and the operators are usually old women. A massage treatment is the highest honor a host can extend to his guest, or receive from him. It is sometimes the custom for the natives, when greatly fatigued, to lie flat on the ground and allow little children with feet bared to walk over their backs.

In the older classical nations, where bodily perfection was such a high aim, the application of the principles of massage was made the chief feature in all physical exercises. Passing through the history of the earlier centuries of the present era, we find that in 1708 Hoffman laid the foundations of the present gymnastic exercises of the German schools. Half a century later Tronchin, at Paris, made a great reputation by his prescribing massage exercises. About 1805 Peter Ling established in Sweden the basis of the present Swedish "movement cures," which constitute one of the most popular forms of massage. Various mechanical appliances are used in the latter system. These appliances our author, Dr. Hünerfauth, regards as injurious because too violent.

But it is only of late years that this new-old remedy has been reduced to a system. Now its benefits are universally acknowledged. Its limitations are fully recognized. Lady Manners, in her interesting article, makes the pertinent suggestion that the practice of massage would afford an outlet for many unemployed women. It is true that the general principles of the practice are included in our training-school courses. But many women might become successful manipulators

who would not be qualified for professional nursing. In these days, when so much is being said and written about employment for women, the suggestion is certainly worthy of remembrance. Physical strength is a first requisite, and hence the number of applicants for this new service would limit itself. The establishment of an institution for the systematic treatment of massage might not be a bad idea.

A SURGEON'S SUICIDE AND THE DOSE OF COCAINE.

NOTHING more tragic, and yet interesting in its details, has occurred in the medical world of late than the suicide of Professor Kolomnin. We have already referred to the main facts, but the whole sad history has been recently laid before the St. Petersburg Society of Medical Practitioners, by Professor Botkin, a personal friend of the deceased. It seems that a young woman, aged twenty-three, was sent to Professor Kolomnin, and found to have a large ulcer of the rectum, which was diagnosticated to be of tuberculous nature. He decided to scrape and cauterize the lesion, and to use cocaine anæsthesia during the operation. The details are given by Professor Botkin as follows:

"In order to produce anæsthesia he had fifty grammes of a five per cent. solution of hydrochlorate of cocaine prepared; of this thirty grammes were brought into use, containing exactly twenty-four Russian grains of the salt, or twenty-three English grains [the Russian grain is exactly one-sixteenth of a gramme], six grains being injected at a time into the rectum. After the third of these injections it was found on examination that the part was still sensitive. A speculum was then introduced, the ulcer dabbed with a dry sponge, and then the fourth injection given, making twenty-four grains in all. After this the parts were tolerably anæsthetic. The ulcer was scraped, and a tampon saturated with oil inserted. The pulse was then accelerated. During the operation the patient groaned, so that even the twenty-four grains had not produced complete anæsthesia.

"After the operation Sergei Petrovich (Kolomnin) went round his ward, and in three-quarters of an hour a message was sent to him that the patient was very low. He found the pulse very weak, the face and hands cyanotic, and the respiration labored. He considered that she was in a toxic state, and used every means to bring her round, Professor Sushchinski being also invited to a consultation. Faradization, artificial respiration, hypodermatic injection of ether, administration of ammonia, tracheotomy for the inhalation of oxygen, stimulating and nutrient enemata—all were tried, but without success. Sergei Petrovich (Kolomnin) had no doubt that death was due to cocaine. To what extent was he to be blamed for introducing so large a dose as twenty-four grains into the body? Some time before the operation he asked Professor Sushchinski about the dose of cocaine, and he told him that he considered two grains as the maximum. He, however, collected a number of special papers on the subject in which some thirty cases of cocaine anæsthesia were reported where from six to eighty, and even ninety, grains had been administered. Most of them were cases of lithotripsy. Of course he knew that the bladder, when healthy, cannot absorb such a quantity of cocaine, but some cases of diseased bladder were mentioned where there must have been absorption. Finally, Dieulafoy had performed an operation similar to Kolomnin's, introducing into the rectum forty-eight grains all at once, with complete success, and this served as a guide. He, however, observed additional precautions, employing only half the quantity, and introducing it in divided doses. How far was he to blame? He certainly put too much faith in Dieulafoy's case, but anyone else might have done the same. . . . It is difficult to account for the French surgeon's success. It is indeed possible that, as his operation was performed at a time when cocaine was dearer than gold itself, being two shillings a grain, it may have been adulterated, and therefore the proper effect was not produced. At all events, whatever blame is due to Sergei Petrovich is greatly lessened by the records in medical literature. He himself, besides, said that he was not to blame regarding the operation, but only with reference to his therapeutics. 'I blame myself,' he said, 'most of all for making an incorrect diagnosis; the diagnosis of tubercle was not confirmed. I ought not to have operated at all, and the patient would have been still living. In spite of my not being to blame, I cannot help feeling at times that I killed her.'"

Professor Botkin thinks that Kolomnin was not in his right mind when he killed himself. He had always been a very reserved man, having no intimates, and confining himself entirely to his scientific work. This characteristic was increasing yearly. He was very strict, both with others and himself; very sensitive, no doubt morbidly so.

His use of so large an amount of cocaine was, no doubt, an error of judgment, and his attempt to use cocaine in an operation about the rectum and anus, a locality so difficult to make anæsthetic, was, no doubt, another mistake.

The experience, though so sad, may not be without its lesson. Are there not other surgeons who could report very serious if not fatal results from the injudiciously or ignorantly using too large a dose of cocaine?

BERI-BERI IN NEW YORK.

SEVERAL cases of beri-beri have been observed recently in New York. They were brought to the city on a vessel from San Francisco, nearly all the crew being attacked with the disease, and several dying. Most of the survivors were in a crippled state, and three were taken to Bellevue Hospital, where two died. Unfortunately the disease was not recognized at first, and no examination of the nerves, or the blood, and no culture-experiments were made.

Beri-beri shows itself in a dry, a wet, and mixed forms, and is sometimes acute, but oftener subacute or chronic in its course.

The cases recently brought to the city were of the wet form and chronic in character.

Drs. Cornelissen and Sugenoya, the one a Danish, the other a Japanese physician, living in Java, have shown that the micro-organism which causes beri-beri is very

similar to the anthrax-bacillus. It is colored with fuchsin or gentian violet, and easily seen. It is found in the blood, muscles, nerves, and serous fluids.

THE DEATH OF THE LATE GENERAL LOGAN.

THE case of the late General Logan appears to be one of those rare ones in which acute rheumatism causes a rapid and fatal issue. On December 12th Dr. J. H. Baxter, of Washington, D. C., was called to see him, and found him suffering from acute rheumatism, involving the right wrist. He improved until the 17th, when he had a relapse, the hips, ankles, feet, and both wrists becoming involved. Brain symptoms also appeared at this time. Though there was some temporary improvement on the 21st and 22d, the symptoms on the whole became gradually more severe, the intervals of full consciousness shorter, until early on the morning of December 26th, when he became comatose. He died twelve hours later.

The cerebral symptoms were those of congestion of the brain.

Acute rheumatism is so rarely a cause of death that some complication is expected, and almost always found, in fatal cases. When death does occur it is, as a rule, with cerebral symptoms, as was the case with Senator Logan. Such symptoms are much more liable to develop in persons whose nervous system has been subjected to tremendous strains, as well as to the toxic effects of narcotics and stimulants.

No doubt the exhausting political and literary labors of the deceased had made it possible for the rheumatic poison to attack and paralyze his nervous centres, thus bringing to a fatal issue a disease that in ninety-seven per cent. of cases is perfectly free from danger to life.

MEDICAL SECTS AND CLINICAL INSTRUCTION IN PUBLIC HOSPITALS.

AN interesting article with the foregoing title appeared in a recent number of the *Boston Medical and Surgical Journal*. The homœpathists of that city petitioned the managers of the City Hospital for equal privileges in that institution with the regulars. The trustees considered the request with great fairness, and deliberated long and carefully before making an answer. Circulars were sent out to all institutions where physicians and surgeons of both schools were supposed to be on the attending staff, to learn the practical workings of this arrangement in other places. This dual arrangement was found to exist in only two institutions, so far as answers were received. And in these two instances it was by no means satisfactory. Thereupon the trustees replied to the petitioners that the granting of the request would necessitate radical changes in the management of the hospital.

Three possible plans suggested themselves. Homœopathic practitioners might be added to the attending staff with a full share in all the latter's rights and privileges. Certain wards in the present buildings might be placed under the control of the petitioners, or new wards might be constructed for them. The trustees were not empowered to make such a radical change in management, as the adoption of these latter plans would necessitate. The petitioners were, therefore, courteously referred to the proper authorities, namely the city council.

In regard to clinical instruction, it was decided that the attending surgeons might operate before the students in the amphitheatre on certain days, and that all physicians and all matriculants of one year's standing, at a legally established medical college, might be admitted. This rule was held to apply to female students. The operator might, if he chose, request the withdrawal of students of either sex in certain cases requiring exposure. No male visiting students were to be allowed to witness any operations on female patients requiring exposure of the genitalia. Students, not exceeding twenty in number, might accompany a member of the staff in his daily rounds.

These resolutions are sensible and discreet. Here, in New York, however, the matter seems to have settled itself in substantially the same way without the formality of trustees' decision. We may be pardoned for saying that our own hospitals are more freely thrown open to students and practitioners than seems to be the case in our sister city. Certainly more freedom is allowed the recent graduates, who generally compose the resident staff. Anyone who wishes to attend surgical clinics is not required to show a certificate of matriculation or of professional standing. We have never heard of any abuse of these privileges. In regard to operations on the female genitals, we are even more liberal than our neighbors, for students are regularly admitted by sections to the operative clinics at the Woman's Hospital, and other institutions as well, and everything is conducted with the utmost decorum. This whole subject bears directly, we think, upon the much-discussed question of higher medical education. This is to be brought about, not only by requiring a higher grade of scholarship, but also by giving students greater practical advantages. We are happy to observe that the position from our hospitals in this respect is such a liberal one.

PEPTONURIA.

THE term peptonuria has not yet gained a place in text-books, and its clinical significance or practical importance has not yet been satisfactorily defined. Clinicians and urinologists, however, are steadily accumulating data regarding the subject, and it will not be long before dogmatic teachers will have to introduce it into their courses. Frerichs in 1851, and Miahle in 1852, first noticed that peptone, or, as the latter then called it, albuminon, is not infrequently found in the urine. Frerichs found it in a case of acute yellow atrophy of the liver; later Gerhardt and Schultzen and Ries found it in acute phosphorous poisoning, and in other conditions attended with acute destruction of the liver. Hoffmeister in 1879 showed that peptonuria occurs in other diseases, and especially in acute suppurative processes. Basing his reasoning on Hoffmeister's observations, Von Jaksch diagnosticated a rupture of the sac and suppuration in a case of ovarian tumor.

Fenomenon found peptone in the urine in cases of excessive formation of young cells along the genito-urinary tract.

Maixner, Bouchard, and Sée have found peptone in the urine in various gastro-intestinal disorders; *e.g.*, can-

cer, catarrh of the stomach and intestines, gastro-ectasis; also in typhoid fever, and in tuberculous and waxy degenerations of the intestines.

Wassermann and Hoffmeister have shown that peptonuria may occur, not only in acute phlegmasia, but in those cases in which there is a profuse serous exudation, as in acute pleurisy and pericarditis.

Jaksch found peptone in the urine in three out of seven cases of scurvy. Peptonuria occurs sometimes in cases of pernicious anæmia. It occurs not only in acute yellow atrophy of the liver, but in one-third of the cases of fatty enlargement of that organ. Senator and Petri say that there is always some peptone in albuminous urine. Poehl, however, denies this, and says that it is only found when albuminous urine is acid. The facts appear to be that in the severe albuminuria of nephritis there is no true peptonuria, but that it may occur in unlike types of albuminuria, and is then due to a transformation of the albumen (Bouchard). In other words, peptonuria accompanying albuminuria has no significance. In dilation of the stomach peptonuria has been observed in sixteen per cent. of (371) cases.

Peptone is a hydrated albumen, which normally, in passing from the gastro-intestinal tract, is mostly dehydrated, becoming the serum and albumen of the blood. Some of it appears to be taken up by the white blood-cells; and when these are multiplied or broken up, as in acute suppurative processes, or scorbutic and septic affections, the peptone is discharged, and passes away by the kidneys. In gastro-intestinal maladies, it is possible that the peptone is not all dehydrated in its passage into the blood, and hence peptone reaches that fluid and circulates with it.

Peptonuria is thus classed by Bouchard as gastro-enterogenous, hepatogenous, hæmatogenous, and phlegmasic. Looked at from another point of view (Ultzmann), it may be said to be present in three conditions: one a general one, including scurvy, typhoid, diphtheria, tertiary syphilis, pernicious anaemia, small-pox, cerebro-spinal fever, phosphorous poisoning, in which it seems to be connected with a general disorganization of leucocytes; the second, a local condition, including pleurisy, croupous pneumonia, pericarditis, acute inflammatory rheumatism, in which it is connected with absorption of exudates rich in leucocytes; the third, also a local condition, including gastro-intestinal diseases associated with imperfect absorption and dehydration of peptone.

It also occurs from local causes in nephritis and genito-urinary catarrh.

Peptonuria does not occur in large amount in the urine. The best of ordinary tests is, perhaps, prussic acid with heat and cold. Prussic acid precipitates peptones; but the fluid if heated clears up, and then is clouded with peptone again on immersion of the test-tube in cold water.

FREE DISPENSARY FOR DISEASES OF THE LITTLE TOE.

The Hospital publishes the full account of how a young medical man, rather anxious for something to do, and Mr. Jeremy Diddler, who is a sort of professional hospital organizer, devised a scheme for establishing "a dispensary for diseases of the little toe." The circular which Mr. Diddler concocts is such an excellent travesty on the current methods of "booming" a new charity that we publish it in full.

FREE DISPENSARY FOR DISEASES OF THE LITTLE TOE.

—— Street, —— Square.

In the year of 1883, 30,807 persons died of diseases of the little toe. This number (which includes cases of gangrene, pyæmia, phlebitis, and bunion) is exclusive of the very numerous deaths from wasting diseases and cancer of the digit. (See *Registrar-General's Report.*)

According to the above extract, diseases of the little toe have occasioned more deaths in England than diseases of any other organ, and a comparison of the returns for 1883 with those of the previous years shows that these diseases are increasing in a ratio greatly out of proportion to the increasing population.

Deaths from Diseases of the Little Toe.

Year.		Year.		Year.	
1874.....	13,846	1877.....	17,908	1880.....	21,915
1875.....	15,401	1878.....	19,634	1881.....	30,940
1876.....	15,009	1879.....	20,879	1882.....	24,802

1883.....30,807

Besides the above number of fatal cases, there is a still greater number of diseases of the little toe not terminating in death, but which give rise to extreme suffering and misery, especially among the poorer classes. *This is the only institution specially devoted to the treatment of diseases of the little toe*, and the fact that in less than two years upward of 10,560 patients (from all parts of England) have been relieved, proves that it is a necessity. The employment of the newly invented instrument (the little-toe scalpel) is a special feature in the institution, and by the aid of this instrument morbid conditions of the digit can be fully exposed and adequately treated. Further aid is required to meet the urgent demands caused by the daily increasing number of out-patients. It is likewise essential that a ward should be speedily opened for the reception of the more acute cases. *At least £1,000 is required to establish a ward containing six beds.* For this purpose the committee have determined to open a new subscription list. Those who desire to assist in this particular way will please notify that their subscriptions or donations are to go to the "ward fund." The benevolent are respectfully informed that the very existence of the institution will be jeopardized unless the funds are considerably augmented.

JEREMIAH DIDDLER, Secretary.

News of the Week.

THE PARIS ACADEMY OF MEDICINE ON THE ADULERATION OF WINE.—After a long and laborious discussion, the Académie de Médecine has finally delivered itself of something definite upon the above subject. Advising from a hygienic point of view, the academy declares: 1. That the *vinage* or alcoholization of wine by pure alcohol to the extent of two degrees may be permitted, but beyond this it should be absolutely forbidden. 2. The addition of alcohol is not only dangerous by its quantity and by the bad quality which is often used, but also because it leads to the practice of "watering," which is at the same time a fraud and an adulteration. 3. The so-called "higher" alcohols considerably increase the dangers of brandies and liqueurs, and it is reasonable to require that the spirits used for the fabrication of these products should be absolutely pure. 4. The academy calls the attention of the authorities to the necessity of restricting the number of retail drink-shops, and of putting into force the laws for the repression of drunkenness. It would appear that the addition of two degrees of alcohol is necessary for the preservation of certain wines of low strength.

DR. J. H. DOUGLAS has gone South for his health, and will spend his leisure in writing up the medical history of General Grant's case.

SINGULAR MORTALITY AMONG MISS HOYT'S MEDICAL EXPERTS IN THE FAMOUS JESSE HOYT WILL CASE.—Since Miss Mary Hoyt commenced the contest, in 1883, against the probate of her father's will, five of her medical experts have been placed *hors de combat* by death, and one by insanity. Dr. J. C. Hennan was the first to die; Dr. Frank Hamilton died last August; Dr. T. A. McBride died at sea the first of last September; and Dr. James A. Milne, of Oswego, died recently from an accident. Dr. Tausky has been an inmate of an insane asylum for about two years. The medical witnesses and experts on the side of the executors are all alive.

MR. T. BIRD.—We have received a note from our friend, Dr. J. A. Irwin, protesting against the paragraph in our recent issue referring to Mr. Bird. There was no intention on our part of casting any aspersions upon Mr. Bird, but we merely gave his professional titles and standing as a matter of news.

A BILL TO EXTIRPATE CONTAGIOUS DISEASES.—A bill has been introduced into the Senate and House, authorizing the appointment of a commission of three persons, to be charged with the duty of extirpating contagious diseases of animals in this country.

SUICIDE AND PLUMBING.—A citizen in St. Louis committed suicide because compelled by the city health department to make proper connections from his house with the sewer.

THE LADY MEDICAL seems to run to Nihilism in Russia, as she does to homœopathy in this country. A report says that eighteen female medical students have been expelled from St. Petersburg for taking part in a meeting which had been forbidden by the police. The female medical school has long been considered a nursery of Nihilists, and attempts have been made to close it altogether.

NO LIMIT TO THE STUDENTS OF MEDICINE.—The Vienna professorial body having been asked by the Minister of Education whether it would not be well to place a limit on the number of students of medicine received, has unanimously pronounced against the adoption of any rule of this kind.

OPHTHALMOSCOPY WILL BE MADE MORE EASY, according to M. Giraud-Teulon, when the direct illumination of the fundus by an electric light fixed in the body of the mirror is used instead of reflected light. Dr. Teulon has devised an instrument for the purpose.

THE SUPRAPUBIC OPERATION FOR STONE is the popular one in Europe now.

ABSCESS OF THE BRAIN FROM TYMPANIC SUPPURATION CORRECTLY DIAGNOSTICATED, LOCALIZED, AND SUCCESSFULLY OPERATED UPON.—The first case of this kind on record has recently been reported by Dr. W. R. Gowers and Mr. Arthur E. Barker, in the *British Medical Journal* of December 11th.

DR. WILLIAM C. WILE, of Newtown, Conn., editor of the *New England Medical Monthly*, has been elected lecturer on nervous diseases and electro-therapeutics in the faculty of the Medico-Chirurgical College of Philadelphia.

FERNANDEZ ON A NEW ANTI-RABIES INOCULATION.—Dr. Fernandez, of Barcelona, claims to have discovered a new vaccine to preserve men and animals from the contagion of rabies. He has collected a great number of observations, showing that dogs bitten accidentally by vipers are never affected by rabies, either spontaneously or when bitten by affected animals. He has made certain direct experiments, inoculating dogs with a small quantity of the viper's poison. After inoculation the animals were ill for four or five days, with symptoms of slight fever, prostration, and more or less profound somnolence. He maintains that the animals thus operated on are protected from rabies, and that neither when inoculated with the saliva, nor when bitten by affected animals, do they contract the disease.

PREVENTIVE INOCULATION AGAINST PHTHISIS.—M. Vittorio Cavagius has reported to the Académie des Sciences, November 29th, that a two per cent. solution of carbolic acid destroys the infective power of tuberculous virus, that a weaker solution (1.25 per cent.) enfeebles or attenuates it. By inoculation of rabbits and guinea-pigs first with inert tuberculous matter, then with attenuated, he found that they were not made tuberculous even when pure tuberculous matter was injected.

DEATHS FROM PHTHISIS.—Dr. Thomas J. Mays, from a study of the vital statistics of several large cities, finds that on the whole the deaths from consumption are less now than formerly, and that the present ratio does not differ greatly in the eastern cities in question. Thus, for Boston it is 15.50 per cent. of the total mortality; in New York (in 1875), 14.09; in Philadelphia, 14.00, in Providence, R. I., 15.43, and in Baltimore, 15.55. In 1885 the ratio was 14.5. Dr. Mays makes a plea for the establishment of a special hospital for consumptives.

CYANATES AND URÆMIA.—Dr. Walter S. Haines, of Chicago, takes exception to the theory of Dr. Peters concerning the production of uræmic convulsions. The theory is based, he says, upon the misconception that cyanates and cyanides are similar in their physiological action, whereas they are widely separated in this as they are in their chemical and physical properties. He quotes Rabuteau ("Eléments de Toxicologie et de Médecine Légale," p. 77), who concludes, as the results of his own experiments with cyanates: 1. That these salts are not dangerous, at least in the doses in which they were given. 2. That they do not remain unchanged in the organism, but are transformed into carbonates, so that the urine becomes alkaline when they are administered to dogs by the stomach in doses of upward of twenty-three grains. Injected into the veins of a dog, fifteen grains of pure cyanate of sodium produced no effect on the health of the animal. "As the cyanates, therefore, appear to be quite inert, their production and retention in the system could not in the slightest degree explain uræmia and uræmic convulsions, and consequently Dr. Peters' theory, I fear, must fall to the ground along with most, if not all, of the other explanations that have been advanced to account for this condition."

DR. JOSEF MOELLER, of Vienna, has been appointed by the Emperor professor of pharmacology in the University of Innsbruck.

Reports of Societies.

NEW YORK PATHOLOGICAL SOCIETY.

Stated Meeting, December 6, 1886.

JOHN A. WYETH, M.D., PRESIDENT, IN THE CHAIR.

MALFORMATION OF THE HEART—RUDIMENTARY LUNG.

DR. FRANK FERGUSON, from the Committee on Microscopy, submitted the following report on specimens presented by Dr. J. Lewis Smith, November 10, 1886:

"The material consists of the heart and lungs, a portion of the œsophagus, and trachea.

"The trachea, which appears a trifle small, terminates in a right and left bronchus. The left bronchus, whose size corresponds with the size of the trachea, leads into the left lung. The left lung is greatly distended with blood and air. It measures from apex to base three and one-fourth inches.

"From hilum to free border it measures two and one-half inches. The right bronchus at its origin is the same size as the left, but it soon terminates in a number of very small bronchial tubes which lead into a rudimentary lung, which measures three-fourths of an inch in length, from hilum to free border one-half inch, and is one-eighth of an inch in thickness.

"The œsophagus passes down in its normal relation to the trachea, and is closely related to, and covers in the right lung posteriorly. Anteriorly the right lung is adherent to the pericardium, and covered in by the wall of the right auricle between the ascending and descending venæ cavæ.

"Air has entered into the rudimentary lung, and it is well supplied with blood-vessels.

"Its alveolar walls are thick, and composed of yellow elastic and white fibrous tissue, with numerous spindle-form cells.

"The vascular supply of the rudimentary lung is not traced.

"The heart has one auricle and two ventricles. The right ventricle, with a very thin wall, has a capacity of one-half drachm. A well-developed pulmonary artery extends from it, and enters by one large single branch into the hilum of the right lung. The pulmonary valve is normal in location and structure.

"The right ventricle communicates with the left by an opening, which is not valvular in character, one-eighth of an inch in diameter, and one-half inch below the pulmonary valve. The left ventricle has a capacity of about five drachms. The aorta, arising from the ventricle in the usual location, is moderately dilated. The aortic valve is normal in location and in structure, with a capacity to admit a cylinder one-quarter of an inch in diameter.

"The ductus arteriosus is open, and admits a probe one-sixteenth of an inch in diameter.

"The mitral valve admits a cylinder one-half inch in diameter. It is composed of one continuous curtain of fibrous tissue, from the free edge of which very numerous tendinous cords extend to the fleshy columns of the wall of the left ventricle. The left ventricular wall is considerably hypertrophied.

"The auricle has a capacity of one and one-half ounce.

"There is no attempt at the formation of a septum. The left auricular appendix extends forward in the normal location, and measures one and one-quarter inch in length and one-quarter of an inch in diameter.

"The right auricular appendix is enormously distended, and filled with a firm, dark blood-clot. It is egg-shaped, one and one-half inch in length and one inch in its greatest diameter. The wall of the auricle, everywhere, is thin.

"The pulmonary veins of the left lung converge to form one vein, which empties into the auricle.

"Under the microscope the fibres of the muscular wall of both the ventricles and auricle are seen normal in appearance."

FIBROMA OF THE LOWER JAW.

Dr. Ferguson also reported on the specimen presented, November 24, 1886, by Dr. Wesley M. Carpenter, in behalf of a candidate.

"The tumor is continuous with the periosteum of the jaw-bone anteriorly. There is considerable bone-destruction on either side of the symphysis. The incisors are crowded to either side. Tumor is labulated. It measures antero-posteriorly one and one-half inch; laterally, one and one-quarter; and vertically, three-quarters of an inch.

"Histologically it is a pure fibroma."

DR. T. MITCHELL PRUDDEN presented a beautiful specimen, consisting of the

ARTERIES OF THE ENTIRE BRAIN,

obtained by maceration and washing. Nearly all the arteries had been affected by chronic endarteritis, and the same lesion was present in the aorta. The heart, kidneys, liver, and lungs were normal.

Dr. Prudden also presented sets of cultivations which illustrated

THE BACILLI OF TYPHOID FEVER.

The *first* consisted of plate and tube cultivations from the fæces of a patient, thirty years of age, in the third week of the fever. The characteristic growth, however, can be best seen upon potato, where the bacilli form an almost invisible film.

The *second* were tube cultivations from the spleen of a typhoid-fever patient.

The *third* were tubes containing bacilli from specimens obtained in Koch's laboratory.

From a diagnostic point of view cultivations of this kind had considerable value; they were often successful, though not always, and it was not difficult to accomplish.

PAROVARIAN FIBRO-SARCOMA.

DR. E. M. CUSHIER presented a specimen with the following history: The tumor was removed four weeks ago, and presented some interesting and unusual features. The patient was thirty-seven years of age, had been married nine years, but had never been pregnant. Her general health was excellent until September, 1885, when she lifted a heavy weight. This effort strained her and gave rise to considerable pain, which passed away within two weeks, and she noticed then, for the first time, that there was a tumor in her abdomen. It grew quite rapidly, and in the following January she was so much distended that she could not get about. During January and February she was very feeble and extremely uncomfortable, but in March her size began to diminish, and this continued in April, and to such an extent that for three or four months she was so comfortable that she thought she was entirely rid of her abdominal tumor. When, however, Dr. Cushier saw the patient in November, the abdomen was very much distended, and presented the appearances of encysted dropsy. Nothing was felt except this fluctuating tumor. The diagnosis was possible ovarian cyst, probable parovarian cyst, because of the sudden disappearance at one time of the tumor.

The operation was performed on November 2, 1886. As soon as the peritoneum was divided, one of the cysts ruptured, and another ruptured almost as soon as it was touched, and the fluid presented the appearance commonly seen in the fluid of parovarian cysts. There was a pedicular attachment to the broad ligament. All the adhesions could be easily separated, except one, that necessitated the removal of a portion of the omentum. A portion of the ovary was left in the stump of the pedicle. The pedicle was so long that it allowed the tumor to go high

up in the abdomen, and it was found to contain a number of tubes, four of which had been opened, and all terminated by a blind extremity within the growth; they admitted an ordinary probe. They were regarded as enormously hypertrophied Wolffian ducts, which would make the tumor parovarian. Histologically it was a fibro-sarcoma, spindle-celled.

The pedicle was ligated with silk and dropped. The patient made a good recovery.

DR. PUTNAM-JACOBI said that she examined the tumor with Dr. Cushier, and reached the conclusion that had been expressed concerning the tubes in the pedicle representing the remains of Rosenmüller's body, although she had not read of a case in which such hypertrophy had existed. She also referred to cases, reported by Dr. Goodell, in which abdominal cysts had ruptured and the patients recovered temporarily, and then they reappeared.

Dr. IRA. J. VAN GIESON presented several excellent

STAINED SECTIONS OF THE SPINAL CORD

(stained according to Weigert's method) which showed some of the less frequent lesions, as solitary tubercle, acute polio-myelitis, etc.

DR. ROBERT NEWMAN presented a

TUMOR REMOVED FROM THE ROOF OF THE MOUTH

of a woman fifty-one years old. It had grown gradually during the last twenty years; more rapidly during the last five months. It was so hard that he was unable to remove it with Jarvis' snare, and used an écraseur. By the aid of cocaine the operation was painless, and there were no unpleasant after-effects. Only last week he had a case in which injection of twenty-five minims of a four per cent. solution of cocaine into the bladder was suddenly followed by an intense pain in the left temple, extending around the top of the head, with a feeling as if the whole top of the head had been blown off; the pain had lasted for ten days, with exacerbations.

The wound healed kindly in the present case, and was covered with mucous membrane. The specimen was referred to the Committee on Microscopy.

The Society then went into executive session.

NEW YORK ACADEMY OF MEDICINE.

SECTION IN SURGERY.

Stated Meeting, December 13, 1886.

STEPHEN SMITH, M.D., CHAIRMAN; A. B. JUDSON, M.D., SECRETARY.

REMOVAL OF THE APPENDIX VERMIFORMIS BY ABDOMINAL SECTION.

DR. J. D. BRYANT reported a case of abdominal section for perforation of the appendix vermiformis. The patient was a man forty-five years old. Death occurred from exhaustion twelve hours after the operation. The patient was seen by Dr. Bryant about sixty hours after the first symptom, which was a slight diarrhœa. This was followed by pain, constipation, tympanites, nausea, and occasional vomiting. The pain was always in the epigastric region, and had been relieved at first by a cathartic. The vomited matter had not been characteristic.

The abdominal walls were found fully distended, without localized tenderness. The hepatic dulness was normal. There were no intestinal sounds or appreciable vermicular movements. Palpation and rectal exploration failed to assist in making a diagnosis. The temperature was 102° F., the pulse 108. It was clear that there was more or less general peritonitis, the result of either obstruction or perforation. The operation was performed with such antiseptic precautions as the circumstances allowed. No obstruction was found. The intestines and the caput coli were extremely distended. These parts, together with the sigmoid flexure, which extended across to the right iliac fossa, where the signs of inflammation were more intense than elsewhere, were deeply congested. Three perforations were found at the base of the appendix vermiformis, which was two and one half inches long, covered entirely with peritoneum, darkly congested, standing nearly erect between the intestinal folds, and presenting somewhat the outline of a small distended leech. It was tied at its base, below the perforations, and removed with the scissors. The abdominal wound was closed and dressed antiseptically, and a drainage-tube was inserted.

DR. JACOBI referred to the redundancy of the sigmoid flexure in this case. It was a projection into adult life of a condition invariably found in the new-born. The moderate degree of the pain, its location, and its temporary cessation, rendered it not surprising that the diagnosis had not been made by the attending physician for a day or two.

DR. STEPHEN SMITH said that in his experience with such cases the pain had been, as a rule, relieved temporarily by a cathartic.

DR. BRYANT said that he had found great difficulty in keeping the intestines in place during the operation; a difficulty which, in another case, he would be prepared to lessen by releasing the gas with a trocar, closing the small intestinal wound with a suture.

CHRONIC HYDROCEPHALUS TREATED WITH INJECTIONS OF MORTON'S FLUID.

DR. ROBERT T. MORRIS reported a case of hydrocephalus which was benefited by repeated aspiration and injection of iodine. The disease was of four months' duration, in a girl aged ten months, when he drew two and a half ounces of fluid from the left side of the anterior fontanelle, repeating the operation twice at weekly intervals, and then injecting half a drachm of Morton's fluid. Treatment was thus continued, with slight variations, for seven weeks, with manifest improvement, shown in the deportment of the child and in the arrest of the arachnoid dropsy. When twenty-two months old, however, the child suddenly died with rapidly recurring convulsions.

GALL-STONES ENCYSTED IN THE ABDOMINAL CAVITY—LAPAROTOMY—RECOVERY.

Dr. Morris also reported a case in which he had removed a tumor, supposed before the operation to be of pelvic origin, but which proved to be a fibrinous mass attached to the abdominal wall, and containing a collection of gall-stones, the sequel of attacks of hepatic colic thirteen years before. For several years there had been no indications of hepatic derangement. The patient was a woman, fifty-two years of age, who for a year had suffered repeated attacks of circumscribed peritonitis.

On examination the left ovary and tube, and the uterus were found to be normal, but the right ovary and tube could not be found. There was a tumor in the middle line of the abdominal wall, with a fistula of three weeks' duration, discharging pus and a clear viscid fluid, about three inches below the navel. A probe would not follow the fistula. The tumor was immovable in the anterior abdominal wall, irregular in outline, painless on pressure, and not causing pain except during an attack of peritonitis.

The abdomen was opened in the middle line, and the right ovary and tube were found enveloped in a fibrinous deposit and drawn upward, but apparently in no way connected with the tumor. Exploration through the enlarged incision showed that the tumor had no close connection except with the abdominal wall and the intestines, which latter were firmly attached as a result of peritonitis. An incision showed the tumor to be a peculiar fibrous mass, honey-combed with little pockets containing brownish pus. It was decided to ablate the tumor and a portion of the abdominal wall, three by two and

one-half inches, including the mass, was removed, an hour being occupied in dissecting away matted intestines and separating matted loops from each other. The last cut, at the upper end of the mass, opened a cavity in which were found six gall-stones; two of them each an inch in diameter, a third the size of a chestnut, and three not larger than kernels of corn. There was neither pus nor bile in this cavity. The little finger, following the line of a small closed canal along the site of the obliterated gall bladder and cystic duct, entered the common duct. On its withdrawal a flow of bile soiled the peritoneum in the vicinity. The margins of the canal were dissected up and sutured to the skin.

The wound, extending from the sternum to the pubes, was closed with difficulty. The skin and subcutaneous fat could be united, but the muscular margins remained three inches apart at one point. The most elaborate antiseptic rules were observed at every stage of the operation and dressing. There was very little shock. Primary union took place. The patient sat up in bed eleven days after the operation, and seventeen days later walked a quarter of a mile to the office of her physician. There is now, six months after the operation, apparently no danger from hernia and the patient is well, although a small opening still allows a scanty passage of bile to the skin.

The Section then adjourned.

Correspondence.

OUR LONDON LETTER.

(From our Special Correspondent.)

THE CONTROVERSY ON LAPAROTOMY—SANITARY REGISTRATION OF DWELLINGS—THE LATE DR. NORMAN CHEVERS—A TIMID PATIENT—A NEW JOURNAL.

LONDON, December 14, 1886.

THE fierceness of the controversy which has been aroused in connection with the Liverpool Hospital for Women will probably be considerably quenched, now that the report of the Committee of Investigation has been published. Great interest has centred round the subject in London as well as in Liverpool. Candid readers of the report must confess, not only that the hospital is decidedly, though not severely, condemned, but that on the evidence brought before them the committee could have come to no other conclusion. They say that, in their opinion, "Sufficient care and discrimination have not been exercised in the selection of cases for operation, and that in many instances the gravity of the symptoms was not such as to have justified an abdominal section of any kind." They point out that the mortality after operations at the hospital for the removal of the uterine appendages has been between eight and nine per cent., and that, if the operation is performed for comparatively trivial affections, such a mortality constitutes a serious objection to the operation. That it has been, in their opinion, so performed is evidenced by the fact that they point out that one of the staff (Dr. Imlach) performed it eighty-five times during the year, whereas his two colleagues only performed it twenty-one times between them. They record their conviction that in some cases loss of sexual feelings and also loss of physical energy have followed the operation. In twelve per cent. of the cases hernia has followed. As a means of treating pelvic hæmatocele, the operation is unreservedly condemned. The committee conclude by recommending: (1) More frequent consultations among members of the staff; (2) that more information be given to patients before operating on them; (3) that patients be retained for a longer period in the hospital after operation, in view of the large number of cases of hernia occurring, and also because many patients discharged as cured had been obliged to remain in bed at their own homes for considerable periods; and (4) that in future only diseases of the female genito-urinary organs should be treated in the hospital, such operations as those for rupture, cancer of the breast, removal of the spleen, and opening the bowels for rectal cancer, being relegated to a general hospital.

At a recent meeting of the Society of Medical Officers of Health a discussion took place on the question of the sanitary registration of dwellings. Mr. Mark Judge, a well-known architect, read a paper on the subject in which he very carefully and fully treated it. Mr. Judge is of opinion that every house should be carefully inspected, and that if its sanitary arrangements are defective they should be rectified. A bill on the subject is shortly to be presented to Parliament, though whether it will pass is more than doubtful. Anything to curtail the liberty of the subject is extremely obnoxious to the average Englishman, as witness the opposition to *compulsory* vaccination, even among educated persons who know its value. Even Mr. Ernest Hart, when a candidate to represent an East End constituency in Parliament, intimated that he would vote for the abolition of *compulsory* vaccination. The views advocated by Mr. Judge are therefore not likely to become law without a struggle.

The death of Dr. Norman Chevers is announced. Dr. Chevers was a distinguished Indian medical officer, and was for many years Professor of Medicine at the Calcutta Medical College. He retired from the Indian medical service in 1876, and for a few years filled the post of warden to the London Hospital Medical College. His contributions to literature have been numerous. Of these, perhaps the most noteworthy and important was his "Manual of Medical Jurisprudence for India," for which he received a valuable prize a few years ago.

Probably some of your readers are familiar with the story of the ancient spinster who, on asking a rising laryngologist how far he could see, was considerably discomposed by his prompt reply, "Far enough, madam, to see that you are sitting on a cane-bottomed chair." A companion story to the above was told to me a few days since, and, as it has the advantage of being true, I will give it for the amusement of your readers. In the outpatient department of one of the largest metropolitan hospitals a boy was recently being ophthalmoscopically examined. One of the by-standers observed him to be trembling from head to foot, and, when it came to his turn to have a look at the fundus, asked the boy kindly what ailed him. "Oh, sir," said the boy, "I'm afraid to think anything." "Well," said his examiner, "I don't see much brains. I don't think you could think much if you tried to," a rejoinder which apparently consoled the boy not a little.

The mention of laryngology reminds me that a new venture in journalism is just announced. It is to be entitled *The Journal of Laryngology and Rhinology*. Dr. Morell Mackenzie is to be the editor, and he is to be assisted by thirteen *collaborateurs*, among whom, however, I notice the names of only two Englishmen, both young men who are just beginning the study of the subject, and who joined the staff of the Throat Hospital after the disruption of its experienced staff last spring.

OUR PARIS LETTER.

(From our Special Correspondent.)

INTELLECTUAL DIFFERENCES IN SAME ETHICAL GROUP—THE HEALTH OF PARIS FOR 1885—THE EXISTENCE OF MAN IN EUROPE AT THE TERTIARY PERIOD—ANTIFEBRINE—SELF-IMPOSED STARVATION.

PARIS, December 10, 1886.

IN a paper on the intellectual differences in the same ethnical group, read by Dr. Fauvelle at the last meeting of the Association Française for the Advancement of Science, the author reminded the audience that the in-

telligence is the manifestation of nervous influx into the gray cortical layers of the brain, manifestation especially characterized by memory and the will. He gave a succinct description of the structure of the cerebral centre. He then divided the intellectual differences into *subjective*—that is to say, depending on the organization itself—and *objective*, resulting from the influence of media, and particularly from education and instruction. After having enumerated these differences, Dr. Fauvelle sought to explain how, in the midst of so many variations, the human cerebral type not only maintains itself, but progresses in a continued manner. He finds the explanation in that in every society the rôle of individuals changes at each generation, and that thus all the variations, all progress, of the cerebral organ are propagated and generalized by heredity. He then concludes that, as democracy prevents the formation of castes, and consequently the maintenance of the same functions in the same families, it is the social form the most hygienic for the intellectual centre. The idea is rather far-fetched, and must be accepted with some reserve.

M. Bertillon, Director of the Statistical Department at the Prefecture of the Seine, lately published a statistical report on the health of Paris for 1885, in which the author draws a comparison between the capital and some of the chief provincial towns. According to the report, Marseilles is the most unhealthy. For instance, typhoid fever is fatal in London and Berlin to 17 inhabitants in 100,000, 14 at Vienna, 19 at Brussels, 63 at Paris; whereas at Marseilles it carries off 149 per 100,000. Small-pox is also more prevalent at Marseilles than at any other city, the deaths having numbered 91 for 100,000 inhabitants. At Paris there were only 12 deaths, and at Berlin 5, for the same proportion. In the Prussian capital vaccination is compulsory; but while it is favored in this respect, it is less so for other affections. For instance, there were 140 deaths from croup for 100,000 inhabitants, while Paris counted only 80, and Marseilles 98. In London the figure for 1885 was 22 deaths from croup for 100,000 inhabitants. Scarlet fever appears to spare Paris more than any other capital. In this city there were 7 victims to the disease for 100,000 inhabitants, but in London there were 17, 31 at Berlin, 10 at Vienna, 28 at Brussels. Among the French cities Marseilles heads the list for insalubrity, for scarlet fever there were 23 deaths for 100,000 inhabitants. M. Bertillon also gave a report of the funerals that took place in 1885. At Paris, for 100 funerals, 28 were purely civil—that is, without any religious ceremony—and the proportion was greater among the poorer classes than among the rich and well-to-do. As regards criminality, or moral hygiene, as it is termed, there were 41,152 individuals arrested in Paris, of whom 35,078 were men and 6,074 women. Among the men were counted 2,469 foreigners. About a third of the arrests among the men (13,549) were for vagabondage or for mendicity. Of the number of males arrested for vagabondage or other causes, 3,218 were under twenty-five years of age.

At a recent meeting of the Academy of Sciences, M. de Quatrefages, the celebrated ethnologist, read a paper in which he endeavored to prove the incontestable existence of man in Europe at the tertiary period. He observed that the extension of man of the quaternary period in all the regions, and up to Patagonia, suffices to render evident his existence anteriorly. The author adds that if tertiary man (the cannstadt race) is indiscutable in Europe, nothing till now indicates his existence in America. He concludes with the belief that the primary cradle of humanity was the extreme north of Asia.

Antifebrine, the chemical name of which is acetanilide, has recently been introduced into therapeutics as a febrifuge. It is a crystallized substance, whitish, little soluble in water, but easily so in alcohol. It has scarcely any appreciable taste. Dr. Dujardin-Beaumetz, who reported on this new medicament at a recent meeting of the Société de Thérapeutique of Paris, represented it as an antithermic in doses of from twenty-five to fifty centigrammes; it lowers the temperature and provokes abundant perspiration. In larger doses, like carbolic acid, it determines cyanosis. In phthisical subjects it has not produced any favorable results. The members present almost unanimously condemned antifebrine as a dangerous antipyretic, and preferred having recourse to antipyrine, which, at least, does not offer any danger, provided it is not administered in excessive doses.

I have just seen Merlatti, one of the Italians in Paris who are passing through the ordeal of self-imposed starvation. From what I had read in the public press, I had expected to find a man in bed in a semi-cadaverous condition; but to my surprise, I saw a young man a little over twenty, moving about with as much agility as would have a man of his age under ordinary circumstances. He was being photographed in various postures, which is in itself a very fatiguing undertaking. During my visit I cannot say that I was favorably impressed with the genuineness of the experiment; for although the man was certainly emaciated, he was not so to the extent that one would have expected on this his forty-fifth day of fasting, as he is supposed to live on nothing but cold water. His weight, according to the report of the doctor in attendance, is forty-four kilogrammes five hundred grammes, his original weight having been six kilogrammes two hundred grammes. He is not being watched so closely as he used to be, as since the thirtieth day of his fasting, when he was advised to discontinue the ordeal, owing to alarming symptoms having set in, he is, according to his express wish and on his own responsibility, allowed to complete the fifty days agreed upon. As for Succi, the other Italian, who has reached the tenth day of fasting, he is doing well, and even appears to be fattening on his starvation—which he attributes to the peculiar virtues of the liquor that he pretends to have discovered, and which he takes. This liquor is said to have the property, not only of assuaging the pangs of hunger, but of preventing the too rapid waste of the tissues of the economy.

Owing to the retirement of Professors Gavarret, Hardy, and Sappey, Professor Potain succeeds to the chair of clinical medicine at the Charity Hospital; Professor Peter takes M. Potain's place at the Necker Hospital. The chair of anatomy and that of medical pathology are vacant. The former is likely to be filled by Dr. Farabeuf, and the latter by Dr. Dieulafoy. The chair of medical physics is virtually filled up by Dr. Gariel, who has been acting for Professor Gavarret for some time.

An international exhibition of hygienic apparatus is to be opened at Lyons on the 15th inst., and will be continued to February 7, 1887.

NOTES OF A VISIT TO PASTEUR'S LABORATORY.

To the Editor of The Medical Record.

Sir: This morning I had the pleasure of visiting the institute where at present Professor Pasteur practises the inoculations for the prevention of hydrophobia in persons bitten by animals suffering with rabies. The modest building containing the various rooms is a low, one-storied structure, temporary in character, and is situated in the court-yard of one of the schools and laboratories for physical research, No. 14 Rue Vaquelin (the school or Latin quarter), an elevated portion of the city on the south side of the Seine, not far from the Panthéon. The rooms include registering, waiting, operating, a small surgery, and a private apartment for M. Pasteur. Visitors are requested (by a printed notice) to procure introductions and cards of admission through their respective ministers or consular officers—if foreigners—but admittance is not denied to medical men sending their cards, and the stranger will meet M. Pasteur and his assistants

and be shown every courtesy and attention. Upon this morning I saw the patients come into the inoculating-room in batches of about fifteen. Led or moved up to the principal assistant, they were singly and quickly treated to the hypodermatic injection of the all-important protective fluid with a simple plunge of the charged instrument, usually into the lumbar region or loins. There was no delay, the patients being prepared and with the clothing removed at the part indicated. They were operated upon in rapid succession, the syringe being charged freshly each time by the assistant whose duty it is to prepare and conserve the inoculating material. The syringe is apparently the ordinary glass and white-metal instrument, and it is introduced in an oblique direction nearly up to the cylinder, and then rather quickly discharged. The patients come and go, for the most part, quite unconcerned. The new patients, naturally, are in some trepidation, while the children commonly set up a howl and struggle somewhat. The parents usually accompany children—the mother often holding her child—friends or relatives are with the adults, and in many cases the local physicians are in attendance. M. Pasteur stands near by, seeing all things done, and constantly speaks cheering words, or soothingly pats a child. Great attention is given to the eliciting of accurate information and details regarding each case, and official documents from physicians, veterinary surgeons, and from those in authority whence patients come, are always required. All possible sources of error are carefully inquired into, and the truth in each case is sought for in a most systematic and painstaking manner.

Besides the people necessary for registering and attending to minor details about the establishment, M. Pasteur had on this occasion four assistants: two attending to the giving of the injections, the same one always using the instrument; one fluid conserver, who charged the instrument (plunging the needle into the cup containing it through a cover of filtering-paper); and one who examined patients—their wounds, condition of health, etc.

On this morning there were treated eighty patients, ten being present for the first time. They were from all countries and of all conditions of life: the gentleman, the laborer, soldiers, sailors, peasants, some colored people, and men, women, and children. There were a few instances of two and three members of the same family. The inoculations, so far as I could learn, produce no points of irritation, and they are almost without exception made into the region of the loins.

It is a most impressive and wonderful scene, for one cannot but reflect upon the doubts and opposing views still coming from many able men, and upon the possibilities of disaster yet before many of these unfortunate people, in view of the frequent long period of latency of the disease; and there rises up in the mind some of the results predicted by M. Pasteur's opponents, that these inoculations *produce* rabies in subjects otherwise free of the terrible virus. The spectacle is in these respects extraordinary, for there undoubtedly still exists a doubt as to the utility of these inoculations, and in some minds a belief that people are perishing from them. Exaggerated reports regarding the fate of some of the patients are frequently met with in some of the French medical journals, but they are nearly always unfounded.

Up to August 1, 1886, the number of patients (Frenchmen) subjected to prophylactic treatment was 1,500, of whom only 10 died. At least eighty per cent. of these cases received bites from undoubtedly rabid animals; so that 973 individuals were bitten. It is computed that 155 of this number would have died if they had been left to themselves, and yet there had been but ten deaths. Dr. Chautemps hence claims that M. Pasteur had saved the lives of 145 of his countrymen.[1]

From what has gone before, and from M. Pasteur's labors and statistics, assuming that the margin of error in his great work is small, and this it seems must be admitted, there is hardly room for doubt that a great number of people are being saved from a horrible death, and that the mortality of those bitten—authenticated cases—has been most remarkably diminished. Therefore, for the present, the evidence is accumulating in favor of M. Pasteur, and we must believe in the practical life-saving value of his discovery.

In the court of the École Normale, in the Rue d'Ulm, No. 46, there is a series of ground-floor buildings, the rooms of which are given up to another part of the work—experimental physiological work, inoculation of rabbits, glass-working in tubes, bulbs, etc.; there are also cases containing monkeys, rabbits, and chemical apparatus. I here witnessed dissections of the spinal cord and the trepanning of rabbits in connection with the inoculations. The operator in trepanning the skull first places the animal prone on a stout piece of board—somewhat longer and wider than itself—ties its legs with cords passing through holes near the edges, and places a cover of filtering paper saturated with chloroform over the nose and head. In a few moments the animal is anæsthetized; he then clips off the hair from the vertex with curved scissors, makes an incision one and one-half inch long, and readily exposes the bone directly at the crucial ridge. He then inserts a pair of spring retractors to keep the wound well open, and while an assistant steadies the head by the hands on the animal's nose and occiput, he applies the trephine, and with a few turns the guard flange of the instrument has come down on the surface of the external table, and the little circlet of bone (three-sixteenths of an inch in diameter) is readily removed with a small hook. The virus to be injected is then sent under the edge of, and away from, the opening into the brain, superficially, and just under the meninges, with a well-curved fine hypodermic needle. If there is any detritus or blood, it is mopped up with a little filtering paper moistened with an aseptic lotion. Two stitches bring the wound together, it is again mopped with the aseptic lotion, and the operation is completed—the animal regaining consciousness as it is being replaced in the basket. There is no brutality, the animal is not conscious of any pain, and the operation is completed in from three to five minutes. The rabbit furnishing the material had been dissected and the cord exposed but a short time before, and the work had been most beautifully done.

SOME RECENT OPPONENTS OF M. PASTEUR.

Within a few months M. von Frische, of Vienna, working under the auspices of a society of ladies of that city, has published his investigations on the value of the anti-rabic inoculations of M. Pasteur, and, as far as they go, they seem to be more or less contradictory to those of Pasteur. Upon this M. Drasche, Professor of the Faculty at Vienna, discusses unfavorably the work of Von Frische, in that it compares poorly with M. Pasteur's work in method, delicacy, and materials; that the number treated (eleven) was small on which to base such conclusions; and that the virus used was not sufficiently attenuated, in all probability. In other words, Professor Drasche refuses to believe that the work of Frische has any value concerning the question of the preventive treatment of hydrophobia by anti-rabic inoculation, and that he has not exactly followed the procedures of M. Pasteur.

The results published concerning the mortality among the patients of the Pasteur Institute at Odessa are reported as being "most deplorable."

In the *Revue Scientifique* for August 21, 1886, there is mentioned a Polish physician, le Docteur Prince Ignace Jagell, who since 1858 has been searching for means to combat hydrophobia. He refuses to admit that sufficient preventive virtue can follow from virus obtained from so inoffensive an animal as the rabbit (after M. Pasteur's method). He thinks that bites from rabid animals through the clothing are always incapable of transmit-

[1] Lecture at Sorbonne, October 10, 1886.

ting the virus, and he maintains that the deaths among M. Pasteur's patients are always from among those bitten in parts unprotected—true cases of hydrophobia from the bites of rabid animals. He also declares that he has treated eighty-eight cases of bites from rabid wolves and dogs, and all have been cured by the infusion of the bark of *Spirea filipenda;* twenty-six of these cases having been found in the first stage of hydrophobia when treatment was commenced.

The same remedy is also mentioned in recent numbers of German medical journals.

REMARKS IN CONCLUSION.

There are at present competent commissions laboriously attending all the steps in the Paris laboratory with a view to prove or disprove, as far as possible, the value or utility of anti-rabic inoculations for the prevention of hydrophobia. There is required only a proper interval of time for this, as the solution of all momentous questions have necessitated. In the meantime the works and speculations of single investigators elsewhere can amount to but very little. The final seal of approval or disapproval will be given at Paris and Berlin, for in no other countries does the state aid as much, nor are the laboratories so complete. In both France and Germany the government in all ways directly fosters and aids in the solution of such great public questions. Opposition and unfavorable criticism exist in all countries, much of it in exaggerated phraseology; and if one read or saw nothing else—much less, had no personal observation of affairs at the Paris laboratory—it is conceivable that from opposition it would be but a step to calling for violent interference with M. Pasteur. There is, however, incontestable truth in the science of preventive medicine, and more or less in M. Pasteur's theory of combating disease in man and animals, much as it may be obscured by the clouds and mists induced by the present defective methods of investigation. Long before Jenner, the Orientals and Chinese practised inoculations for the prevention and amelioration of disease, and now, in this nineteenth century, why not M. Pasteur with the attenuated anti-rabic germ, and a Koch with an equally disarmed bacillus?

In this direction medical science is now steadily advancing, clearing away the *doctrinaires* and mounting upon the higher plane of ascertained facts and truths of modern experimental research, yet continually being tested in the fires of adverse criticism. It is now the brain working more with the eye and hand, where formerly hair-splitting theorizing in the sea of clinical observations absorbed all the faculties of the leading men.

It is not disputed that putrefaction, fermentation, and the causes of other low forms of life are now well known, and that these but precede the more important and deeper studies known under the general term bacteriology. It is not necessary to mention here the list of disorders and diseases, local and general, occurring in the animal kingdom and in man, influenced and caused by bacteria wherein opposing argument has in great part ceased.

Aseptic surgery cannot be denied its superiority, whether it consists in absolute purity of surroundings and other natural means of attenuation and dispersion of germs, or in the paraphernalia of its strictest exponent; and it has not been my fortune to see elsewhere such general success with operations as I had the pleasure of witnessing recently in Paris, at the Hospital Tenon, under Dr. Championnière, and in Edinburgh under Dr. Cheyne. Recent surgery is eliminating the former well-known mortality from joint-operations, laparotomy in its general sense, and trepanning the skull, whilst diagnostic incisions are now recognized legitimate procedures.

The history of life and of disease in all nature is being accurately revealed in all its possible bearings, and the lessons of that knowledge are being utilized for the conservation of human existence. Applying to organic beings in apparent health attenuated virus, or disease-germs modified by culture, by inoculation or by any means whatsoever, to procure a protective influence, is a result arrived at by the present studies of M. Pasteur and men like him. Similar conclusions follow observations upon the well-known protective effects of acclimation, workmen in sewers inspiring polluted air constantly, etc.

In conclusion, it will not be out of place to mention here a very recent and most remarkable advance made in the power of the microscope, effected in Germany, with the support of the government. It consists in an improved lens, composed of a newly discovered quality of glass of great hardness, permanency, and freedom from color, and cut according to a new system of curvatures. At a late meeting of the Royal Society it was asserted that the general power of microscopes would be increased thirty per cent., consisting chiefly in greater achromatism of the objective.

CHARLES A. SIEGFRIED,
Surgeon, United States Navy.

SOME POINTS CONCERNING INTUBATION OF THE LARYNX.

TO THE EDITOR OF THE MEDICAL RECORD.

SIR: Will you kindly allow me a communication, in order that, through your columns, I may answer the many questions which come to me through the mail regarding intubation of the larynx.

My paper before the Academy of Medicine was written for the audience, and not for print. I see, since its publication, how incomplete it was when it came to be read outside of New York.

I will try and answer the questions that have been written me, and anticipate one or two.

First, the tubes known as O'Dwyer's tubes for intubation of the larynx for the relief of laryngeal stenosis are, with latest modifications, made by and for sale by George Tiemann & Co., New York City. These tubes, five in number, are of different sizes, appropriate for children from infancy to twelve years of age. The remaining instruments of the set are inserting-instrument or handle, extractor, mouth-gag, and gauge. The price for the complete set is $35.

As to indications for operation. First, be sure of the diagnosis. Is the dyspnœa due to laryngeal stenosis? I have been called several times to insert the tube where the dyspnœa was marked, and yet not of laryngeal origin, and a tube would afford no relief.

To determine this point the chest must be examined. If the thorax expands and contracts freely, and air enters all parts of the lungs freely, the dyspnœa is not due to laryngeal obstruction. Recessions and diminished vesicular murmur over the lower posterior portions of the lungs argues that it is of laryngeal origin.

When shall the tube be inserted? When the laryngeal obstruction has advanced to such a degree that air no longer enters freely all parts of the lungs. Wait for cyanosis? By no means. Neither wait for this "danger-signal," nor till the patient is exhausted from labored respiration and restlessness and sleeplessness, nor till the lungs are injured from collapse and congestion. Ordinarily the course is as follows: Croupy cough, then croupy respiration, restlessness, and recessions, cyanosis. As soon as the entering air ceases to give low-pitched vesicular murmur, which in a child with accelerated respiration should be very distinct, it is time to insert the tube.

It is my experience that a narrowed larynx causes an increase in the frequency of respirations, and on inserting the tube and relieving this condition the respirations, at once become slower. They may fall from thirty-six to twenty-two immediately.

Each instrument-case should contain braided silk of such size as to run freely through the eyelet of the tube.

If the silk is twisted instead of braided it may fray out and become jammed in the eyelet. This should be cut eighteen or twenty-four inches long, passed through the eye to the middle of its length, and the two ends brought together. Some tie the two free ends together, but that is not necessary. When the obturator is pushed into the tube the thread should be made to lie in the groove of the obturator. When properly placed the thread is of service in wedging the tube upon the obturator, maintaining it in position.

When should the thread be removed? I remove it as soon as the child inspires once and shows the tube to be in position, and before removing the gag. It can do no harm to wait longer, but the thread may become entangled and drag out the tube. Waiting necessitates putting in the gag again, and this time the child will object. In withdrawing the thread pass the left index-finger into the larynx upon the head of the tube, and hold it from coming out, while with the other hand grasp one of the free ends of thread and so pull it away. Having removed the thread, as a last assurance press the head of the tube well down into the box of the larynx, and when all is done remove the gag. The shorter the time the jaws are pressed widely apart the less the exhaustion. From the time the child is in position and the gag well placed, the remaining manipulations need require no more than fifteen to twenty seconds.

Some of my correspondents have used chloroform, both in inserting and extracting. With the tendency to heart failure in diphtheria, I could not but feel this to be very hazardous and would by no means recommend it.

The position of the child as recommended in the paper cannot be too strongly urged. The tube and the handle when ready for insertion are at right angles to each other. So, too, the axis of the trachea and of the mouth should be at right angles. The child should be placed "as though it hung from the top of its head." The nurse should sit in a straight-backed, steady chair, hold herself straight upright, and grasp the child by the elbows, while she restrains the child's feet between her knees. In addition to this, an assistant should stand behind the nurse, place a hand on each side of the child's head and face, and hold it firmly. He cannot in the same grasp include the gag and hold it secure.

The modified mouth-gag of Dr. Denhard seems to me to be an improvement on that of Dr. O'Dwyer. The child by raising his shoulder may displace the latter, and to meet that difficulty Dr. Denhard has carried the levers straight back toward the ear instead of allowing the downward direction of the original gag.

The modified gag is made by Tiemann & Co., and must be specially mentioned, if desired, when ordering sets of instruments.

What medicine is to be given after the tube is in? Answer: Milk and whiskey. I have occasionally found my tubes well corroded when enthusiasts in bichloride treatment and advocates of iron have been hard to manage. Any rectal medication is without objection, and quinine suppositories are much used by Dr. O'Dwyer.

One correspondent states that he received a set of tubes, and before he could practise on a cadaver had a call to a croup case, and succeeded without difficulty in inserting the tube.

Yours truly,

W. P. NORTHRUP, M.D.

37 EAST SEVENTY-NINTH STREET, NEW YORK,
December 25, 1886.

URETHAN FOR THE INSANE.—Dr. Sighicelli has found urethan of service in certain forms of insanity, especially in mania. He ascertained also that while in most forms of mental trouble no additional effect was caused by an enlarged dose, in mania the intensity and duration of the sleep increased with the increase of dose. In dementia, idiotcy, hysteria, and epilepsy, the drug was of less service.

Army News.

Official List of Changes in the Stations and Duties of Officers serving in the Medical Department, United States Army, from December 19 to December 24, 1886.

FORWOOD, W. H., Major and Surgeon. Granted leave of absence for one month. S. O. 129, Department of Dakota, December 16, 1886.

LAUDERDALE, J. V., Captain and Assistant Surgeon. Ordered from Fort Concho to Fort Clark, Tex. S. O. 174, Department of Texas, December 16, 1886.

EVERTS, EDWARD, First Lieutenant and Assistant Surgeon. Ordered from Fort Grant to Fort Apache. S. O. 136, Department of Arizona, December 16, 1886.

MASON, CHARLES F., First Lieutenant and Assistant Surgeon. Ordered from Fort Huachuca to Fort McDowell. S. O. 136, Department of Arizona, December 16, 1886.

BANISTER, W. B., First Lieutenant and Assistant Surgeon. Ordered from Fort Wingate to Fort Lowell. S. O. 136, Department of Arizona, December 16, 1886.

DIETZ, W. D., First Lieutenant and Assistant Surgeon. Ordered from Fort Stanton to Fort Bayard. S. O. 136, Department of Arizona, December 16, 1886.

POLHEMUS, A. S., First Lieutenant and Assistant Surgeon. Ordered for duty as Post Surgeon at Fort Gaston, Cal., relieving. S. O. 123, Department of California, December 13, 1886.

RAYMOND, H. I., First Lieutenant and Assistant Surgeon. Ordered for duty at Angel Island, Cal. S. O. 123, Department of California, December 13, 1886.

ANDERSON, C. L. G., First Lieutenant and Assistant Surgeon. Assigned, temporarily, to duty at Whipple Barracks, Ariz. S. O. 132, Department of Arizona, December 7, 1886.

Medical Items.

CONTAGIOUS DISEASES—WEEKLY STATEMENT.—Report of cases and deaths from contagious diseases reported to the Sanitary Bureau, Health Department, for the week ending December 25, 1886:

	Cases.	Deaths.
Typhus fever	0	0
Typhoid fever	13	3
Scarlet fever	34	7
Cerebro-spinal meningitis	5	2
Measles	497	58
Diphtheria	123	47
Small-pox	0	0
Yellow fever	0	0

VERY EARLY VOTING.—Our fiery friend Daniel, in his *Texas Medical Journal*, shifts the heavy political responsibility of the following quotation on the *Nashville Journal of Medicine*, "For voting of infants, one grain of calomel to one ounce of lime-water; to this add one pint of pure water, and give a teaspoonful of the mixture every ten minutes."

THE LAY PRESS AND QUESTIONS OF PUBLIC HEALTH.—The *Sanitary Engineer*, speaking of the relation of the daily papers to the accomplishment of sanitary improvements, points out that progress in the improvement of health, the diminution of sickness, and the lengthening of life depends in part on the increase of human knowledge of the laws of physics, chemistry, and

biology, and in part on the diffusion among the people of the practical deductions from this knowledge. Sanitary legislation and improvements for any given community must be regulated very largely by the opinion of the majority of the taxpayers and voters in that community as to the necessity for them, and hence, to obtain action for securing a purer water-supply or a better system of sewage disposal, it is not sufficient that a few skilled engineers and physicians are satisfied of the need of the improvement, and of its practicability at a reasonable expense, but the people, from whose hands the funds are to come, must also be "educated up" to the requirements of the situation. This is, of course, a legitimate and an important mission for the public press. That it is often most worthily discharged is thankfully admitted. But that this responsibility is also liable to abuse is well pointed out by our contemporary. "The chief defect of newspaper sanitary literature, taken as a whole," it says, "is its tendency to exaggeration and sensationalism, and its liability to be dictated or inspired by a desire for an advertisement. The man who is interested in a patent filter is ready to furnish a column or two on the impurities of the water-supply, with, it may be, a few choice engravings representing strange forms which he tells the shuddering public are entomostraca, desmids, etc. He is careful not to explain that these organisms live in pure water—in fact, that they cannot live in water that is very impure. The man with a patent trap wants to arouse the people to a sense of the dangers of sewer-gas; the dairyman wants to explain the poisonous properties of oleomargarine; the man who failed to get the appointment of health inspector wants to show up the negligence of the health department, and each and all of them do the best they can to get some newspaper to publish their philanthropic essays. To those who know how much of this sort of matter is floating round in manuscript form in our large cities the wonder is, not that our newspapers should publish so much rubbish in the way of sanitary letters, etc., but that they should publish so little as they do, and when alarming stories alleging a dangerous condition of the Croton water appear in our daily papers it is safe to assume that the editor has been deceived, or the business department have inserted the matter as 'a reading notice' at so much a line."—*The Boston Medical and Surgical Journal*, October 7, 1886.

"Bumm on a Diplococcus" is the title of one of the papers contained in the report of the Würzburg Medical Society for 1885. The author, Dr. Bumm, found the diplococcus in the pus of a mammary abscess.

To Inspire Confidence.—A dentist in Mexico had a patient who was timid about having a tooth extracted. To show him that the operation amounted to nothing, the dentist called the boy who wielded the mallet and, telling him to open his mouth a minute, pulled at one of his teeth. The patient was not reassured, and the dentist lost his small boy.

Ether Spray in the Pains of Locomotor Ataxia.—Dr. Raison states that he has succeeded in completely controlling the pains of locomotor ataxia by means of ether spray directed against the most sensitive point and carried a short distance upward along the course of the nerve-trunk supplying the part. The application should be carried to the point of congelation of the skin, and its good effects are increased by at the same time directing a current of air from a bellows upon the parts to which the ether spray is applied.—*Journal de Médecine et de Chirurgie Pratiques.*

The Cosmetic Effect of Small-pox.—Dr. A. S. Deane, writing in the "Chinese Customs Medical Reports," says that when he was physician to a large fever hospital in Ireland, a young girl was admitted in the vesicular stage of semi-confluent variola. He was experimenting at the time on the various methods proposed for preventing pitting. The plan adopted in this particular instance was to cover the face with a paste of whiting mixed with carbolized oil, while the patient's hands were confined in a sort of strait-jacket. The result was eminently satisfactory. No scar remained anywhere, except on the point of the chin, where the friction of the bed-clothes continually rubbed away the application. Previous to her illness the girl's appearance was homely in the extreme, but she was discharged in possession of a dimple on her chin which lent her a bewitching air whenever she laughed, and from that time out she carefully cultivated a cheerful expression of countenance.

The Poor of New York.—The registration bureau of the Charity Organization Society records a list of 71,332 different families, or a total population of 285,000 individuals, involved in mendicancy or dependence.

Chian Turpentine in Cancer.—Dr. John Clay reports three more cases of cancer cured by Chian turpentine. Dr. G. W. F. Bury reports also a very striking case with a similar result. On the other hand, Dr. William Dale says that the drug was tried in the cancer wards of the Middlesex and of the W. Norfolk and Lynn Hospitals without result.

The Treatment of Asthma by Large Doses of Tincture of Lobelia is recommended by Dr. Nunes (*Bull. Gen. de Ther.*), who attributes failures with that drug to its use in too small amounts. Dr. N. gives ℥ ss. to ℥ j., combined with benzoate of ammonia. The following cases are alluded to in Nunes' communication: A man, fifty-six years of age, was suffering for a year from strong dyspnœa and coughing, interfering with his sleep. On auscultation whistling and bellows-sounds were heard. Heart and blood-vessels were normal. Nunes prescribed: ℞. Tinct. lobeliæ, f 3 iv.; ammon. benz., 3 iiss.; aquæ dest., f ℥ vii. M. S.—A tablespoonful every two hours. Later the quantity of lobelia was doubled. The patient recovered completely. A man twenty-four years of age suffered for three years from dyspnœa and cough. The vascular system was normal, but the liver was enlarged. The latter condition was removed by giving the patient: ℞. Calomel, gr. viii.; pulv. rad. rhei., sacchar., āā gr. vii.; S.—Take before retiring. Later the following was prescribed: ℞. Tinct. lobeliæ, f 3 v.; ammon. benz., 3 iii.; aquæ dest., f ℥ vii. M. S.—Tablespoonful every two hours. After three days, cough and dyspnœa had decreased. Nunes then ordered: ℞. Terpine, gtt. 15; mixt. gumm., f ℥ vii. S.—Tablespoonful hourly. As the condition of the patient grew worse, Nunes resorted to the dose of 1 f ℥ of lobelia in 7 f ℥ of water, as given to the first patient, whereupon the patient recovered. In two other cases, Nunes obtained the same favorable results by equally large doses of the tincture of lobelia.

An Irish Health Resort.—Surgeon-General Gordon writes in the *Medical Press* calling attention to Lisdoonvarna, in County Clare, Ireland, as a health resort. He says it is delightfully situated on high land exposed directly to the winds from the Atlantic Ocean. The wells are sulphurous and chalybeate, and the waters enjoy a high reputation in the neighborhood in the treatment of eczema and psoriasis, chronic rheumatism and gout, scrofula, chlorosis, and certain forms of dyspepsia.

Microbes in Urinary Calculi.—At the Paris Biological Society, M. Galippe stated that he had examined arthrophytes removed from a knee, and had observed microbes in them the same as he had detected in calculi removed from the bladder; he had isolated them and cultivated them. This investigator is therefore confirmed in his belief that the crystallizations found in the human economy develop through the agency of microbes.—*New Orleans Medical and Surgical Journal.*

The Medical Record

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Original Articles.

THE CURE OF POTT'S DISEASE WITH RECESSION OF THE DEFORMITY.[1]

BY HENRY LING TAYLOR, M.D.,

NEW YORK.

A PROFOUND change in the prognosis of vertebral caries has been witnessed within a generation. In spite of the intelligent labors of Pott and his successors, the malady which bears his name was regarded, thirty years ago, as one of the most unpromising, if not hopeless, with which the surgeon had to deal.

It was thought to be the expression of a constitutional taint so vicious that its victims could scarcely hope to escape contractions, abscesses, paralysis, visceral degenerations, or general marasmus. A fatal issue was not believed to be doubtful for very many, while the unfortunate survivors would be obliged to carry through life the hideous mark of their disease. This unfavorable view was justified in the main by the natural history of the affection, and these unfortunates can still be observed in various stages of disintegration wherever they do not have the benefit of modern methods of treatment. The few cases of spontaneous cure with moderate deformity, especially when the disease is located in the lumbar region, and the more numerous examples of restoration to fair health after long-continued disease, and in spite of great deformity, emphasize these statements rather than impeach them.

The mechanical conditions presented by the locally softened or disintegrated column furnish a plain indication which has been generally recognized and acted upon by orthopædists. Modern methods of providing local rest and protection without confinement meet this indication more or less perfectly, and have considerably modified the prognosis. The more adequate of these methods, efficiently used, have proved so successful that we now regularly expect, with faithful home care and co-operation, and barring accidents, to check and heal the caries in all but the last stages, and to restore the patient to health and usefulness. Even in long-standing and complicated cases, often satisfactory, and sometimes brilliant results can be obtained. There are, indeed, very few cases where correct mechanical methods and painstaking attention will not effect a complete cure, and such exceptions will be found only, I believe, in the last stages of the disease or in constitutions vastly more depraved than those of our average subjects.

Admitting that the main object of treatment, the cure of the disease, can, with favoring conditions, usually be attained, how does the case stand with regard to the deformity, a question scarcely second in importance in the mind of the patient and his friends.

It is fortunate that the protective means employed to arrest the morbid process tends not only to prevent increase of deformity by checking the disintegration in the acute stages of the disease, and the yielding and compression of the new tissues which inevitably occur where protection is too soon discontinued, but that it can also be so used as to cause positive amelioration of the deformity in many cases, and absolute recession in a few. It can be made to develop whatever capacity of straightening there is in the compromised column.

The average ultimate result in Dr. C. Fayette Taylor's private practice, using his antero-posterior leverage supporting and protecting apparatus thoroughly and for a sufficient length of time, has been, under favoring conditions of attendance and home attention, the definitive arrest of the deformity at or near the point it had reached before such protection was furnished. A moderate amount of immediate straightening is not uncommon at the beginning of treatment, and this gain can frequently be maintained where home attention to the details of treatment is satisfactory. Compensatory curves above and below the seat of disease can often be modified by adaptations and adjustments of the pressure and leverage of the apparatus, and the figure may sometimes be notably improved in this way, even in apparently desperate cases.

There remains, however, a small class of cases where the deformity increases in spite of good care, and a larger class where, owing to too infrequent visits, which preclude those progressive and delicate modifications of detail which the varying indications of the disease demand, and which are so essential to proper support and to the best results, or to the lack of patient, intelligent, and painstaking home attention, there will be gradual, and, it may be, extensive increase of deformity.

It should be said, however, that owing to differences in constitution, or in the grade of the morbid process, many cases will do well under more or less unfavorable conditions. Such results may be thankfully accepted, but they cannot be counted on. It is also true that in cases of extraordinary severity in depraved constitutions the deformity can sometimes be arrested by exceptional attention and care, even where a fatal result cannot ultimately be averted.

This is shown in the case of a little girl who came to Dr. C. Fayette Taylor in December, 1874. She was then six years of age, and she had been taken ill four and a half years previously. During this time she had had severe gastralgia; an abscess had appeared in her right side four years before, and it was discharging at the time of examination. The patient's family history was bad. When first seen she was weak, pale, and emaciated; she suffered severely from gastric pains; she had been bedridden eight months, and there had been at times partial paralysis of the rectum and bladder; there was bilateral psoas and hamstring contraction, so that the heels touched the buttocks, and there were two marked projections, one from the fourth to seventh dorsal, and the other from the tenth dorsal to the second lumbar vertebra. It seemed probable that the entire spine below the neck was affected, and that suppuration was active—certainly about as unfavorable a subject as one could well imagine. The antero-posterior leverage support was applied at once with very marked relief. Soon after psoas abscesses appeared on both thighs, and the patient became anasarcous and had albuminous urine. She afterward began to improve, the abscesses alternately closing and discharging a little, until in 1878, and again in 1881, she walked for a time with crutches. In March, 1881, she was looking fat and well, and had been, for her, in excellent health for two years. In the spring of 1882, however, the patient assumed a waxy pallor, and was evidently failing rapidly. She died of exhaustion while in the country the following

[1] Read at the meeting of the Section on Orthopædic Surgery of the New York Academy of Medicine, held November 19, 1886.

July, undoubtedly with waxy viscera. The figures (A)[1] show the contour of the back before protective treatment was begun, December 3, 1874, and again on May 24, 1877.

It will be observed that in spite of the active and extensive suppuration going on, and the many unfavorable features of the case, no increase of deformity took place; on the contrary, both projections diminished considerably. To those who believe that the recumbent position will prevent deformity, I would state that this child sat up, crawled about the floor, and was taken out of doors before the last pattern was taken. There was no increase of deformity after this up to the time of her death.

Besides illustrating the fact that deformity may be arrested or prevented in a fatal case, we may infer from the one just cited that the progress of the curvature is not an accurate index, in all cases, of the state of the disease. We may see the disease getting better, or even well, while the deformity steadily increases; and we sometimes see the deformity arrested or reduced while the patient is really on the whole growing worse.

These statements regarding the prognosis of Pott's disease and its attendant deformity under mechanical treatment are the result of a study of these cases in the practice of Dr. C. Fayette Taylor and myself, and the cases cited, and to be cited, were treated according to the methods and principles advocated by him.

To sum up, our experience as to the deformity warrants us in expecting, on the average, to arrest its progress.

Before proceeding to the main object of this paper, the relation and discussion of certain exceptionally favorable, almost paradoxical, results, which have been observed and recorded from time to time in our practice, it seems necessary to say a few words regarding spinal mobility in Pott's disease. This is a large subject, worthy of separate and exhaustive treatment. I can only briefly indicate a few points.

In the irritative stages of the disease there is reflex muscular rigidity and consequent impairment of motion in the spinal column. When caries and ulceration take place the disks are compressed, and some of them disappear completely or in part, thus in addition organically limiting motion. True bony anchylosis is a much later and rarer event in Pott's disease, as well as in other joint diseases, than has usually been assumed to be the case. This is well shown by a study of the dorsal contours of a series of cases in all stages before and during suspension, such as will be found in Professor L. A. Sayre's report on the treatment of Pott's disease by suspension and the plaster bandage ("Transactions, American Medical Association," 1876), and in the work entitled "Spinal Disease and Spinal Curvature," published in 1877. It will be seen that the weight of the body during suspension produces a straightening that cannot well be wholly attributed to compensatory curves, and that presupposes motion through the diseased area in many even of the greatly deformed and long-standing cases, such as used always to be called anchylosed, and still are by many surgeons. Similar results can be seen after a voluntary effort to straighten, of which I show an example in these photographs.[2] In this instance the greatly deformed subject was able, while seated, to add voluntarily about an inch and a half to his height by simply making an effort to straighten up. Careful examinations by means of lead tracings taken under different conditions show motion in most of these old, so-called anchylosed cases, which is not easily explained by compensating curves. We have a large series of such tracings. It is easily seen that the spine straightens considerably, especially in acute cases, when the patient is placed on his face on a flat couch. I show two patterns (B) of a recent case, taken before treatment was begun, the one after the child had lain on his face for about an hour, the other a few days later,[1] when the child was sitting up. A larger part of the change is above and below the affected vertebræ. The patterns of another case (II.) before treatment show motion at the point of disease. We usually find the spine mobile to some degree in old as well as recent cases, and many patients are cured with motion through the affected vertebræ. I have a considerable amount of evidence in support of these assertions in my possession, but have not space to submit it here, nor do I wish at this time to discuss the questions raised by the foregoing statements. I merely deduce two propositions that have a more immediate bearing on our present study.

1. The position of the patient is of considerable importance where patterns of the back are taken for record and comparison.

2. Many years must be allowed to elapse before ultimate results as to deformity can be studied and recorded, since in the absence of anchylosis, even if caries is cured, the new tissues may yield and a gradual bending take place.

This latter proposition has unfortunately been verified several times in our practice, when patients insisted on discontinuing support too early, not being able to comprehend its necessity in the absence of symptoms. A gradual and considerable increase of the projection resulted in several instances, sometimes without any recurrence of other local or constitutional symptoms.

I wish to call attention in connection with the cases of recession of deformity, which I will now proceed to relate, to the length of time many of them were under observation, and especially to the length of time which had, in several instances, elapsed between the date of discontinuance of treatment and the last examination.

The patterns were taken by means of a flexible lead strip, which, after being accurately fitted to the back, was traced on card-board and the tracing cut out. Great pains were always taken to have them accurate, the pasteboard pattern always being applied to the back to see that it actually did fit before it was accepted. As the patient is never allowed to sit or stand without the apparatus, while there is any disease, the first patterns are always taken with the patient in the prone position on a hard, even couch. After the cure the pattern is sometimes taken with the patient sitting, so that the conditions of posture are those least favorable to improvement in outline.

Case I.—The patient, a young girl, was first seen in December, 1864, and was then about thirteen years of age. She was bedridden and had been given up to die by her physicians and friends; there were abscesses either side of the lumbar vertebræ, and over the crest of the ilium, discharging pus and pieces of bone. The application of protective apparatus was followed by prompt relief of symptoms, and the disappearance of the deformity in the dorso-lumbar region, which was considerable, as shown by the pattern.

Fig. 1.

An outline taken in May, 1872, five and a half years after the beginning of protective treatment, showed a mere trace of the deformity. The patient was then in rugged health and actively devoted to society, horseback-riding, etc., without fatigue; in fact, she felt so well that she had not reported with sufficient frequency at the office. In 1877 she still wore the apparatus as a protection, and an abscess on the left side, above the crest of the ilium, was still discharging. This patient married and had one child. I have recently heard through a relative that she continued in fair health until about a year ago; since that time she has been seriously ill, and a few days ago I heard of her death, but I have not been able to learn the particulars.

[1] The patient faces to the left in all these profiles.
[2] Shown at the meeting of the Section.

[1] The date of the pattern taken sitting should read October 21st.

CASE II.—A delicate girl, aged eighteen, subject to headaches, applied for treatment in January, 1865. She had complained of pains in the stomach for several years, and had a knuckle in the lumbar region of the spine. This patient wore the spinal apparatus and progressed favorably. All the symptoms and the deformity disappeared. The apparatus was removed in 1871, and the patient soon after married. She was seen by me in March, 1886, having been in perfect health since her discharge, and was an unusually strong, in fact robust, woman, and had, clothed, no trace of the disease or deformity. She has five healthy children. Her patterns, taken in 1877, six years after discarding the support, show flexibility of the spinal column, and no deformity. (See Fig. 2.)

FIG. 2.

CASE III.—This patient came in January, 1865, aged three years and nine months. The disease had existed eighteen months, and was located at the eleventh dorsal to the second lumbar vertebra. When presented he could hardly walk. There was immediate and great improvement following the application of the apparatus, the patient walking erect with ease, and considerable recession of the projection soon followed. He continued very comfortable until October, 1865, when abscesses appeared on both sides and in the left groin, followed by extensive sloughing and penetration of the peritoneal cavity. During the following winter the patient's condition was bad, but in July, 1868, he had improved very much, the abscesses had contracted and discharged less, the appetite was good, and his prospects of recovery were considered encouraging. During this time the curvature had markedly diminished, and it continued to straighten until the last pattern was taken, December 7, 1868 (Fig. 3); but there was evidence of the disease appearing three vertebræ higher up. There is no record after this, and I do not know the ultimate result.

FIG. 3.

CASE IV.—The patient, a delicate boy, five and a half years old, came, April 8, 1869, with slight prominence of the lumbar vertebræ, and a bad tilt to the left. He had fallen down-stairs in the August before, and the shoulders began to be elevated soon after. The mother had noticed the spinal curvature only five weeks. The patient had complained of being hurt on coughing, and had pains in the chest and abdomen at times; he breathed badly and was easily tired. A spinal apparatus was applied April 10, 1869, and the patient did well. In 1873 his health was excellent, though he still leaned to one side. In August, 1876, the patient reported in excellent health. He was nearly thirteen years of age, fifty-eight and a half inches tall, and had not worn the brace for several years. The patterns (Fig. 4) show that the slight deformity had disappeared.

FIG. 4.

CASE V.—A little Cuban girl, of three and a half years, with disease of the lumbar vertebræ—probably of traumatic origin—psoas contraction, gastralgia, and an abscess to the left of the projection, was brought, unable to walk, February 26, 1870. The projection was first noticed by the mother three months previously; there was no phthisis in the family. Protective treatment was begun at once. December 24, 1870, an abscess was opened on the right side. On June 21, 1871, the abscesses were closed, the psoas contraction had disappeared, and her health was good. In spite of an attack of intermittent fever, contracted on Long Island in 1872, the patient seemed to be (March, 1874) in perfect health, and there had been no symptoms of vertebral inflammation for over a year. The patterns show marked straightening, at the point of disease, from June, 1871, to May, 1873. The pattern taken in 1873 fitted exactly in December, 1876; the one taken March, 1877, showed considerable further improvement. In February, 1878, the patient seemed cured, and was well formed and developed, but it was deemed advisable to continue the use of the apparatus and increase the pressure, as a slight lateral deviation of the spinal column, which had always been present, seemed more marked. The pattern taken in December, 1879, showed a further slight improvement in the deformity (Fig. 5). On May 12, 1880, the patient was thirteen and a half years old, fifty-seven and a quarter inches tall, and in remarkably good health. This patient's mother wrote recently that her daughter was in perfect health.

FIG. 5.

CASE VI.—A girl, eight years of age, a native of Cuba, came in August, 1872. The relatives were healthy, and there was stated to be no phthisis in the family. A mild attack of measles had occurred two years previously. In May, 1871, while in excellent health, the patient was taken with a severe paroxysm of pain in the right side, accompanied by very difficult respiration. These attacks began without apparent cause, and continued at intervals until the August following, when they disappeared after electrical treatment. Since then the paroxysms had ceased, but pain in the side was provoked, whenever the patient received a sudden jar, up to the date of examination. At about the same time a peculiar gait (shrugged shoulders and contracted chest) was noticed, which has continued. In the spring of 1872 the patient had a severe fall over the balusters, and at that time the projection of the back was first noticed. At the date of examination the patient's health was beginning to fail, there was slight left psoas contraction, and pain in the side. The contour of the back is shown in the pattern (Fig. 6). The spinal apparatus was applied August 12, 1872. The patient was relieved of pain in the side after the first night. In spite of too irregular attendance (the patient being in a convent), and an attack of diphtheritis, with partial paralysis of the left forearm and the muscles of deglutition, in the spring of 1873, the patient did well. On April 22, 1873, hard pads (horn) were substituted for the soft ones on the apparatus. On October 6, 1873, Dr. C. Fayette Taylor predicted recession of deformity, and modified the apparatus so that there was more pressure on the lower part of the projection. In October, 1873, the patient complained of pain on the inside of right thigh. Slight psoas contraction was discovered, and the probability of abscess recognized. On November 25, 1875, very marked diminution of the projection was noted. The patient's health was excellent. The alarm excited two years before by the psoas contraction has procured greater care on the part of the mother. September, 1876, health excellent; contour of back perfect. Apparatus removed in April, 1877. This patient was seen several times in the spring of 1883. She was of the ordinary stature, and her figure and health were perfect.

FIG. 6.

CASE VII.—A boy, five and a half years of age, came June, 1873. Examination showed a considerable kyphos in the mid-dorsal region of the spine, seen in the tracing (Fig. 7). Two years before he had had a fall, striking on the buttocks; a knuckle was noticed a year previous to coming. His general health was delicate; he had had suppuration of the cervical glands at seven or eight months of age, and had been troubled with imperfect digestion. He suffered no pain, except at times in the stomach, after a passage from the bowels. No apparent abscess and no paralysis. Slight right psoas contraction. Family history good, so far as ascertained. The patient walked at twenty-two months. Protective treatment was begun at once, and was kept up until 1878—five years. The

FIG. 7.

deformity, which had been considerable, completely disappeared during the first year of treatment, and never recurred. This patient has been seen frequently since his discharge, and maintains perfect health; there is no deformity, and but a slight stiffness at the previously diseased focus. In April, 1886, this patient was eighteen years old, and had not worn any apparatus or received any treatment whatever for the back for eight years; his figure and health were perfect. Chest: expiration, thirty-three inches; inspiration, thirty-six inches. Height, seventy inches in stocking feet; and weight, one hundred and forty-three pounds. The spine was normal and flexible. The patient could bend easily forward, and to both sides, some stiffness at the old focus being the only remaining trace of his disease.

CASE VIII.—A little girl, five years old, came in March, 1875, with disease of the tenth to twelfth dorsal vertebræ. Pain in the sides and stomach were noticed in October, and the projection, in the December preceding. She had had a wheezing respiration, and had been sickly for three years; she had previously been very healthy. She still suffered at the time of application from gastric pain, and there was a right psoas contraction. The apparatus with hard-rubber pad-plates was applied in March, 1875. The patient did well; the acute symptoms were promptly relieved, and the deformity, after increasing some, diminished a good deal. All treatment was discontinued in December, 1884, the patient having been well for some time, but wearing the apparatus to prevent yielding of new cicatricial tissues. The patterns (Fig. 8) show the course of the deformity. The last one was taken in May, 1884. I have heard that this patient has remained well, but have not had an opportunity to examine her recently.

FIG. 8.

CASE IX.—The following case illustrates not only very remarkable rectification of deformity, but restoration to health in a case where the constitutional symptoms were so severe as to make it seem almost hopeless. The little boy, six years of age, was brought with disease of the lower lumbar vertebræ, and very considerable angular deformity, in March, 1884. The parents dated his trouble from the previous July. In December an abscess broke in the left groin, which was still discharging freely at the time of the examination. The patient was of waxy hue and cadaverous appearance; he could neither stand nor walk; ate very little; right psoas contraction; skin dotted with pustules; pain at sides, and at times could not be stirred. The patient lay in bed with the limbs flexed, not attempting to move, and hardly able to speak—the sickest-looking child, but one, I ever saw. The spinal apparatus was applied April 8, 1884. The patient's temperature was taken frequently, and he was found to have a fever, running up to one hundred and two degrees in the afternoon. After the apparatus was well fitted this disappeared, and the patient seemed much brighter. At the end of a month he was taken home, and returned in June in a poor condition. He was very weak, and there was a fluctuating swelling over the right side of the sacrum, and extending over the right ilium, and up into the lumbar region. This was incised, and much thick pus evacuated. After this, another incision was made higher up, and a spontaneous opening appeared still higher. The three openings soon coalesced, leaving a large granulating aperture. All this time the patient was doing well, and the deformity was beginning to recede rapidly. He began to walk the last of July, 1884, four months after beginning treatment. After returning from the mountains, in September, he weighed forty pounds. He walked easily and stood upright. He was also able to lie flat on his face, which he never could do before, only slight contraction of the right psoas remaining. The patient continued to improve in every way, recovering good color and appetite, and becoming quite active. The parents discontinued treatment, contrary to advice, in 1885. When last seen, in May, 1885, the abscess in the groin was still discharging moderately, and the one behind only a very little from a small opening. The patterns show the change in the deformity (Fig. 9).

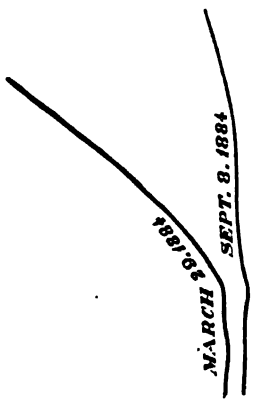

FIG. 9.

The foregoing nine cases have been selected from our notes solely with reference to the study of the decrease of deformity which they have exhibited, and which has been carefully recorded by means of their patterns. They do not comprise all, even of the marked examples, as I have not made a systematic search through our records, but have merely taken such cases as I knew of or chanced to find, and have omitted several good examples because the history or patterns were wanting. I have personally seen and studied, according to my opportunity, seven cases of the nine. They are certainly exceptional, and not ordinary results.

Their histories show that most of them suffered from advanced disease of severe grade before they had mechanical treatment, and in several the deformity was very considerable, representing a good deal of tissue-destruction. Suppuration, appearing externally, and psoas contractions were the rule. The disease was located, in all but one or two cases,[1] below the middle of the back. Positive progressive straightening at the kyphos is not doubtful in most of the cases, and in numbers it has been proved to be permanent, and not temporary. Whatever the explanation of these facts, this straightening is something more than the rounding off of sharp projections, which usually occurs when a vertebral caries is healing. Secondary or compensatory curves are seen in some of these cases, but are not competent to cause the change at the focus of disease.

I think that these cases furnish strong evidence, if such were needed, that Dr. Taylor's spinal apparatus is capable of relieving the diseased bodies of the vertebræ of pressure, as it is inconceivable that the gelatinous new tissues of healing should wedge apart the bodies of the affected vertebræ, and thus straighten out the projection. The distances between the spines was marked off on several occasions in cases of total recession, and seemed to show that there had been longitudinal condensation, which implies a sliding upon each other of the articular facets. So that these patients, even when the deformity has totally disappeared, have probably slightly shortened backbones.

I had the opportunity, last spring, of assisting at the autopsy of a patient of Dr. Seguin and myself, who died from a cancer of the spinal column, apparently originating in the body of the first lumbar vertebra, which had almost entirely disappeared. There must have been a longitudinal condensation in the spinal column of at least half an inch, and probably more; but there was no knuckle or kyphos of the lumbar spine, though there was rigidity and the normal lumbar curve was obliterated.

In concluding I would express the hope that the discussion may clear up many points in regard to recession in Pott's disease, which I am conscious of having imperfectly presented, and especially that it may show us how this desirable result may be more frequently attained.

201 WEST FIFTY-FOURTH STREET.

DRUGGISTS.—A druggist is not inappropriately termed the pill-ar of society.—*Exchange.*

[1] Since writing this paper I have found another good case of recession in the mid-dorsal region.

DO ANTIPYRETICS AS AT PRESENT EMPLOYED MODIFY THE DURATION OR MORTALITY OF TYPHOID FEVER?[1]

By S. BARUCH, M.D.,

PHYSICIAN TO THE NEW YORK JUVENILE ASYLUM.

If we appreciate the enormous mortality of typhoid fever, as gathered from the reports of our city Board of Health, we must acknowledge that this disease is a scourge in New York City. Through the kindness of Dr. Nagle I am in possession of the statistics of cases and deaths reported during the past ten years—from 1876 to 1885 inclusive. These offer the following startling figures: 7,712 cases and 3,184 deaths, or an average of 41.28 per cent. of mortality. And during the present autumnal season, viz., from September 1 to December 16, 1886, the cases reported are 527; the deaths, 183; showing the enormous mortality of 34.68 per cent. These being stern facts, is it not high time that the profession should awaken to the magnitude of the question propounded for discussion to-night: "Do the antipyretics as at present employed modify the duration or mortality of typhoid fever?"

Referring to the statistics obtained from Dr. Nagle, it would appear that many of us are at this very time daily confronted with the burning question of treatment. It will therefore be of immense value to ourselves, and more especially to the large number of those who are to-night languishing with this slow, insidious, and treacherous disease, if we can contribute something to their relief and ultimate recovery, by our discussion of this subject of antipyretics.

Let us approach it, therefore, with a full sense of our responsibilities and a correct appreciation of its solemn magnitude.

In response to your request, Mr. Chairman, I will briefly outline my personal experience regarding this vital question, referring at the same time to what I regard as the ideal antipyretic therapeutics of the present time. This succinct clinical statement of my position will, I trust, introduce the subject.

Unfortunately for the calling to which we have devoted our lives, our therapeutic problems can never be demonstrated with that mathematical precision which true science demands. The premises of the problems presented to us for solution are, as we all know but too well, so unreliable, variable, and occult, that, after all, we are relegated to an enlightened empiricism in our therapeutics of disease. Even in typhoid fever, a disease which is so prevalent as to be constantly under observation in all parts of the world, under all conditions of temperature, climate, age, habit, and environment, the treatment has not yet reached a satisfactorily settled position in the minds of the profession.

The first improvement in typhoid-fever management resulted from the idea that it is a self-limited disease, with a tendency to prostrate the vital powers. This idea came during what I term the renaissance period of medicine, that period which was signalized by the abandonment of violent efforts to throttle disease by active medicinal incursions upon the system, and by the substituting in their stead a wise observation of the conservative tendencies of the natural powers as exemplified in the development and maintenance of the human body in health and disease. In following the guidance of nature the expectant method of treatment was developed, with the result that the mortality was at once reduced.

But as in the treatment of other acute diseases various remedies still remained in vogue whose mildness did not forbid their application, and whose action was in the direction of a favorable influence upon the comfort and well-being of the patient, and thus aided in the maintenance of his vital powers, so was developed a treatment of typhoid fever whose aim it is to improve upon the purely expectant plan. Extremes of the latter have come to be viewed with as much suspicion as extremes of the former active medication. The sins of omission in the one are as reprehensible as the sins of commission in the other. Why is this question of antipyretics before us to-night? My answer is that the extremists of this new, active therapeusis have brought this valuable method into disrepute, so that even in Germany, the nursery of active antipyresis, the profession has called a halt, and is pausing ere it continues to rush headlong in the wake of Brandt's extreme cold-water or Liebermeister's quinine treatment. A recent cartoon, evidently drawn by one of Berlin's medical artists, ridicules the extremely expectant and antipyretic wings of the profession, and, as the well-conceived work of the humorous pencil usually does, brings the idea home to the observer. He represents two patients lying ill of typhoid in a hospital. One of these is surrounded by a number of physicians, who, with anxiety depicted on their countenances, are introducing thermometers into the mouth, axilla, and rectum, while near by stands the hydropathic paraphernalia, Brandt, and Liebermeister. The other patient is calmly lying upon his couch, while upon a distant cot sit the expectant doctors, with legs crossed, puffing cigarettes, and complacently watching with serene countenance the progress of the sufferers. Let us avoid both extremes. It has been carefully noted, and evidence continues to accumulate to establish *as a fact*, that in typhoid fever there are several indications to fulfil. Old Professor Schoenlein used to say there is an indicatio causalis, an indicatio morbi, and an indicatio symptomalis to guide the physician in the treatment of all diseases. If we could remove the indicatio causalis and neutralize the etiological factor of typhoid fever, we would accomplish a truly scientific feat. But although we are not without hope in this direction, the day still seems far off ere such a consummation will be reached. All that we may do, therefore, lies in the direction of the indicatio morbi et symptomalis.

The elements of danger which threaten our patient have been well ascertained to be: First, hyperpyrexia, which jeopardizes the heart-muscle and induces great depreciation of the entire muscular system by the excessive oxidation, to which it is partly due. Second, failure of the vital power through the enfeebled condition of the digestive and nutritive processes. Third, the immediate and remote results of the local gland-lesions.

I hold that the physician who clearly recognizes and has steadily in his mind's eye these ever-present dangers, and who endeavors to arm himself with means to avert and neutralize them, will attain to the most successful results in his treatment.

I hold that the first and most threatening of all perils in typhoid fever is heart-failure. So long as the cardiac sounds are clear, the impulse at the apex distinct, and the pulse-wave resisting, so long, we all know, there is a good prospect for our case.

Let the temperature be what it may, with a good heart we expect to carry our patient through safely. A good heart is to the physician in typhoid fever what a stanch ship is to the mariner in a storm. Let us, then, do all we may to preserve the integrity of that organ, upon which so much depends. I say to *preserve its integrity* advisedly, for while we may not need the strong heart during the first days of the fever, the day will come when we will call upon Hercules to help us, and woe betide our patient if we *then* call in vain, if we *then* discover too late that the golden moments for storing up reserve forces in the heart have slipped from our grasp. The first weeks offer an opportunity for providing against the day of need, which will almost surely come in all cases in which a high temperature has prevailed.

I hold that we possess, in a judicious selection and application of the antipyretics at present employed, a therapeutic resource which preserves the heart and muscular

[1] Read before the Section in Practice of Medicine of the New York Academy of Medicine, December 21, 1886.

system for the struggle which will be thrust upon the patient. Some hold to the view that stimulants administered in the beginning of the fever process tend to conserve cardiac energy; but this idea has been proven erroneous. Stimulants afford a spur to the heart when already enfeebled and laboring under stress of typhoid fever. They are as valuable at this time as they are injurious in the early days of most cases.

We know, however, that a continuous high temperature imperils the heart, and disables it from coping with coming emergencies. By reducing this temperature to a reasonable limit, the danger is diminished. A temperature of 102° or 103° F. is not fraught with danger; on the contrary, the fever process is a conservative effort of nature, it should not be violently interrupted. But when the temperature rises to 104° and over, and so continues for many hours without falling below 103°, at last there is danger to the heart. It must be reduced at once. If this rule be applied in the early days of the case, I have no doubt that the course of the disease will be favorably modified.

I do not favor very cold baths nor large doses of antipyrin (these being our safest antipyretics at present). Just enough antipyresis to bring the temperature for five to seven hours below the danger point, is urgently demanded. It is an error of frequent commission to regard a temperature below 103° as dangerous and to intercede for its reduction. All that is necessary is to *curb the pyretic tendency* and leave the rest to that good old handmaiden of the doctor, the *vis medicatrix naturæ*. Not many years ago, when high temperatures were first ascertained to endanger the heart, all considerable elevations were regarded askance, and then a false idea became prevalent, resulting in the present depreciation of antipyretics. To stem the tide which is now running in the opposite and surely dangerous direction, I beg to raise a voice of warning to-night. There is need for a pause of reflection. Many friends whom I meet in consultation or discussion are becoming sceptical regarding the benefits of antipyretic remedies. Some have been too enthusiastic on the subject, and are now in the stage of depression; others delight in a therapeutic nihilism and are happy to say: "I told you so, it is useless to administer medicines in typhoid fever; it is a self-limited disease, let it take its course; examine for the bacilli, cultivate them with diligence; then be sure to make the post-mortem, and you will find the diagnosis confirmed." This is true science, they say! But what good does this scientific method afford to the patient. He wants to be cured, he does not want the bacilli cultivated, but his vitality maintained, his temperature reduced, his sleep secured, and his ulcers healed. And this brings me to another view of this question.

Experience teaches that in the treatment of all diseases of any duration, it is of immense importance to bend every effort to secure for the patient as nearly a normal condition as is possible. In other words, the more comfortable we can make him, the more sleep we secure for him, the more naturally his secretions are maintained, the more surely is he to recover. Now, we have in the graduated Ziemssen bath and in the more recently introduced antipyrin, safe and certain measures to reduce the high temperature, which not only jeopardizes that fountain-head of all his strength—the heart—but which also renders him thirsty, wakeful, restless, and altogether miserable. We reduce a temperature of 105°, by moderate doses of antipyrin and cold sponging, to 102°, the patient perspires, the pulse softens, the tongue becomes moist, the kidneys act better, and altogether our patient expresses himself as more comfortable. Is this not an important factor in carrying the case to a successful issue?

From what I have briefly said it will be gathered that while I do not believe that the duration of typhoid fever can, to any great extent, be shortened, nor relapses or complications avoided by the use of antipyretics, I do believe that its course may be decidedly modified and the mortality reduced. Careful study of this subject during the past ten years, and comparisons with my results during the preceding fifteen years, have left this impression on my mind, until it has become a fixed conviction. To cite statistics from my own observation would accomplish but little, for it requires a very large number of cases to reach a conclusion upon this point.

We must therefore come back to an empirical knowledge, deduced from repeated and careful observation of cases in their various phases.

A few words more on the subject of "antipyretics as at present employed," and I have done. This should be an important element of our discussion to-night. The idea that the secondary effect of antipyretics is depressing to the heart, has been urged as a serious objection to their employment. This is true of large doses of these remedies, as it is true of inappropriate doses of all valuable remedial measures. The sudden submergence of a typhoid patient with a temperature of 104° into a bath of 60°, several times a day, according to Brandt, may not weaken a German soldier, but it is not so well adapted to an American constitution, if we may judge from our own hospital reports. At any rate, this heroic treatment has not found favor in our hospitals.

We have come to recognize the fact that a rapid and sudden reduction of temperature, from 104° to 99°, is not necessary at all, even if it be not a dangerous measure. All that is required is to bring the temperature down below the danger-point, and keep it there for four to six hours out of the twenty-four. This may be accomplished by cold sponging and cold wet compresses over the larger part of the anterior portion of the body, without disturbing the patient very much. Indeed, these are so grateful to him that he rarely objects to them. By this means the temperature may be almost invariably brought down one or two degrees, and held at this point for a few hours. If it be necessary, however, to make a more rapid impression in cases of very high temperatures, the graduated Ziemssen bath may be resorted to with advantage.

To a patient with a temperature of 105°, water at 95° will feel rather cool, and afford sufficient shock to the nervous centres to arouse them. The extremities are kept out of the water as much as possible, and chafed if cool; ice-water is added near the neck of the patient, and by rapid stirring the temperature of the bath is reduced to 80°. The pulse is watched, and a thermometer in the mouth will indicate when a reduction to 101° has been attained. The patient is now wrapped in a linen sheet, his extremities enveloped in flannel, and a wet compress laid upon his abdomen. The result will be an almost certain reduction of temperature for several hours. If the nervous centres are overcome, and stupor is present, a more sudden cold immersion will be of great value, and often accomplish more than the mere reduction of temperature or stimulants can do.

In a large proportion of cases, however, the bath is not required, especially as we now have in antipyrin a safe, reliable, and rapid antipyretic. It is my practice now to prefer antipyrin to the bath, unless there be considerable disturbance of the nervous system, with sleeplessness and delirium.

And here again it should be urged that the heroic doses prescribed by the gentlemen who introduced antipyrin are entirely unnecessary. Doses of thirty grains repeated hourly until the temperature be reduced to 100°, I have never resorted to. Hence I have never seen cases of collapse. A dose of twenty to twenty-five grains for an adult, repeated in an hour if the temperature has not begun its downward course, will accomplish all we require for the safety and well-being of our patient. Bring the temperature to 101° or 102° for four or five hours, and the pernicious effect of a continuous hyperpyrexia on the heart will be stayed. The later stages of the disease will afford valuable evidence of this antipyretic

effect, inasmuch as the heart will respond to stimulants when it begins to flag, during the third or fourth week.

A recent case, in which I had the pleasure of being associated with our chairman, demonstrated this effect of antipyrin. A boy, seven years of age, came under my care during the second week of typhoid, with temperatures ranging daily to 104°, which were reduced by five- and seven-grain doses of antipyrin. He passed favorably through the fourth week; temperature became normal and remained so three days. Peritonitis now ensued, during which five grains of morphia in the course of twenty-four hours were administered hypodermatically, without the slightest effect upon the agonizing pain. Morphia was stopped, and one-fourth grain calomel administered, and two drachms of mercurial ointment rubbed into the arms and thighs. The bowels moved, distention subsided, pain was subdued, patient fell asleep, and the temperature became normal. Two days were passed in comfort and hope, but now the evacuations pointed to deep ulcerations with hemorrhage. Various remedies and articles of diet were tried, until barley-water alone was given, when the mucous and bloody stools ceased at once. Now the temperature rose suddenly, with chattering of teeth, to 105°, and fluctuated to 106° constantly. A severe chill occurred on the day previous to his death, which was due, I believe, to hepatic abscess. Even in this depressed state, three-grain doses of antipyrin reduced the temperature two degrees, and the pulse became more full during the lowered temperature period. The chief point I desire to emphasize is the fact that during all these trials, lasting two and a half months, the pulse often failed, and even became so rapid as not to be counted; but stimulants always brought it up, making it slower and steady, so that, even twelve hours before his death, the pulse was steady and not very compressible at 150.

This case clearly demonstrated the saving effect of temperature reduction in the early stages, and the advantages gained in emergencies which may follow from a well-preserved heart; while at the same time it points to the fact that antipyrin does not prevent complications or sequelæ.

To summarize, then, I would say that a proper use of antipyretics modifies the course of typhoid fever and diminishes the mortality, because it diminishes the chief danger—heart-failure—and because it enables us to render the patient more comfortable, and therefore more quiet and tractable.

41 East Fifty-ninth Street.

Paris Hospitals a Century Ago.—The celebrated Hôtel Dieu, in Paris, only about one hundred years ago presented many features consistent neither with humanity nor the most rudimentary hygiene, as we understand the subject. A humane law forbade the hospital to turn away any patient seeking admission; but the law, apparently, did not insist upon the provision of the necessary space. The whole establishment covered only about three acres, and within this area there were crowded at one time over five thousand sick and injured people. It was computed that, without allowing anything for staircases, passages, and offices of various kinds, there must have been a sick person in every floor-space of thirty feet, right throughout the hospital—every floor-space seven feet and a half long and four feet wide, that is to say. A large proportion of the beds were intended to hold four people, and into these six patients were frequently crowded. It is said to have been no unusual thing for two or three small-pox patients to have been huddled into a single bed, and as many as four women in childbirth were thus laid side by side. Indeed, if some accounts may be relied upon, things were at times far worse than this. The hospital seems to have been adapted only for times of normal public health. Any outbreak of epidemic disease crowded the place to a frightful extent.—*The Hospital.*

THE TREATMENT OF HERNIA BY SUBCUTANEOUS INJECTION.[1]

By W. B. De Garmo, M.D.,

Instructor in the treatment of hernia at the New York Polyclinic.

It has been said that our present method of treating hernia by subcutaneous injection is old; that it had been thoroughly tried, found wanting, and discarded years ago.

Before considering the results of the method as now used, I shall attempt to prove, by the literature of the subject, that this criticism is unjust, and not founded upon fact.

The history of subcutaneous injection begins with Velpeau, who in 1840 published[2] what he termed a new operation for the cure of hernia.

It was performed by making an incision with a bistoury through the integument and subcutaneous fascia to the hernial sac.

The sac was then opened just enough to admit the nozzle of a syringe, and from one-half to one drachm of tincture of iodine was injected.

This was done with the view of exciting an inflammation which should obliterate the hernial sac in the same manner that hydrocele is sometimes cured.

At about this time Dr. Pancoast was experimenting in the same field, and in his "Operative Surgery"[3] published in 1844, he claims to have used his operation for eight years, and with considerable success.

He passed a small trocar *into* the hernial sac, and with the sharp point of the instrument scarified its inner surface.

The trocar was then withdrawn from its cannula, and half a drachm of tincture of iodine, or an equal quantity of the tincture of cantharides, was injected.

The year previous to the publication of Dr. Pancoast's work, Heaton had published an article in the Boston *Medical and Surgical Journal*,[4] in which he claimed a new method of treating hernia.

After some commonplace remarks he says: "In order to excite the necessary irritation in the parts immediately concerned, I inject, with a very delicate instrument invented for the purpose, an exciting fluid."

He does not state what the fluid was, nor does he describe the instrument used further than stated in the paragraph cited.

In later numbers of the same journal,[5] from 1843 to 1847, he gives reports of cases cured, as he claims, but fails to make known the details of his operation.

At this period Heaton, deservedly, had some bitter opponents; but even those who denounced him in the strongest terms admitted that he was curing some of his cases of hernia, while most other operators were meeting with almost constant failure.

In 1850 Dr. H. G. Bigelow[6] advocated the treatment of hernia by injection of iodine into the hernial sac. Careful review of his writings at this time leaves little doubt that he thought that Heaton was doing the same operation.

One year later Dr. J. Watson[7] speaks with indignation of the man in Boston who had not made known his method, but admits that one of his own patients had been cured by him.

Dr. Watson determined upon doing what he believed to be essentially the same operation, although he deemed it safer to cut down to the sac than to attempt to reach it with a trocar.

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[1] Read before the Medical Society of the County of New York, December 27, 1886.

[2] Nouveau procédé opératoire pour la cure des hernies, Gaz. des Hôp., Paris, 1840.

[3] A Treatise on Operative Surgery, p. 282. Philadelphia, 1844.

[4] George Heaton: New Treatment of Hernia, Boston Medical and Surgical Journal, vol. xxviii., February, 1843.

[5] Ibid., vols. xxix., xxx., xxxi., xxxiii., xxxvii.

[6] Inguinal Hernia treated by Injection, Boston Medical and Surgical Journal, vol. xliii., 1850.

[7] J. Watson, M.D.: The Radical Cure of Hernia by Injection of Tincture of Iodine, New York Medical Times, vol. i., p. 326.

Accordingly he opened up the parts and injected tincture of cantharides into the hernial sac. His patient was not cured, but some improvement was claimed.

In 1852 a committee appointed by the American Medical Association to inquire into the best methods then in use for the treatment of hernia reported as follows :[1]

"I. That there is no surgical operation at present known which can be relied upon with confidence to produce in all instances, or even a large proportion of cases, a radical cure of reducible hernia.

"II. That they regard the operation by injection by the subcutaneous method as the safest and best. This will probably in some cases produce a permanent cure, and in many others will afford great relief.

"III. That compression, when properly employed, is, in the present state of our knowledge, the most likely means of effecting a radical cure in the greatest number of cases."

This committee called upon Heaton to disclose his method, but failed to obtain any information from him.

In 1854 P. Ricord[2] devised a long trocar especially designed for injecting the *interior* of the hernial sac. The following year Nélaton[3] published what he termed his modification of Lecocq's trocar for the same purpose.

This brief review completes the literature of the subject until as recent a date as 1877, nothing of consequence having been written between 1855 and that date.

A most careful study of the subject proves that all modifications of the operation were directed toward the destruction of the hernial sac, and that all instruments devised only sought to aid in accomplishing this end. The substances introduced—cantharides and iodine—were those calculated to produce an inflammatory action. This error of considering that to the presence of the hernial sac in, and protruding through, the inguinal canal, is *wholly* due the recurrence of the hernia, is one that has repeated itself age after age.

Early in the present century Sir Astley Cooper and William Lawrence, doubtless the most eminent authorities on hernia who have ever lived, demonstrated that the destruction of the sac was not absolutely essential to the cure of the hernia. Notwithstanding this fact nearly every operator has seemed to be thoroughly impressed with the idea that no cure could result unless this end was attained. It is quite certain that those writers already cited in connection with the early history of subcutaneous injection had that object, and apparently none other, in view. In 1877 a new era was opened in the subcutaneous treatment of hernia by the publishing of the methods which Heaton had been using from 1843 up to that date. It was shown that the operation was founded upon principles entirely at variance with those which had been indorsed by Velpeau, Pancoast, Ricord, Watson, and others.

He made no attempt to destroy the hernial sac, his fluid was not one intended to produce an inflammatory action; in fact, against the latter condition he carefully guarded. The whole intent of the operation was to so fortify the fibrous and connective tissue surrounding the canal that a protrusion would not occur. Had it not been for the death of both Dr. Heaton and the able editor of his book, Dr. J. H. Davenport, within a few months after the issue of their work, doubtless much additional light would have been thrown upon this operation.

As it was, however, it was left in the hands of the profession, complete as regards the method of operating, but lacking in many of those practical points which an almost life-long experience could have furnished. As a matter of fact the Heaton method stands alone. It differs in every detail from previous methods of subcutaneous treatment. The fluid used acts primarily as a strong astringent, and secondarily as a mild but persistent irritant. This action is upon the muscular and tendinous structures of which the canal is formed, and upon the connective tissue which binds its various layers together.

Wood, in speaking of the inguinal canal, says :[1] "It is closed in a valvular way by the close apposition and areolar connection of the deep and superficial walls or boundaries. This adhesion by connective tissue is torn or stretched in the formation of a hernia, . . . and it is one of the most important objects of a radical cure of hernia to restore this adhesion and reinstate the valvular action of the walls of the canal, if possible." To accomplish this Mr. Wood has for many years advocated his method, which he calls subcutaneous, of bringing the walls of the canal into apposition by loops of copper wire introduced through a small aperture in the scrotum. Mr. Spanton[2] has attempted to obtain the same result by the use of what he calls his corkscrew instrument, this also being called a subcutaneous method. The result in both of these operations, however, depends upon an inflammatory action which may at any time exceed its intended limits, to the very great risk of the patient's life.

That the necessary restorative process can be established, and a favorable result obtained in many instances by the white oak-bark injections, I have had sufficient evidence to convince me, and that this is accomplished without risk to the patient is equally certain.

Seven years ago[3] I made a plea for the fair trial of this operation, which at that time, and for reasons then stated, was being neglected by the profession.

In my indorsement of the method I was at that time almost alone; but since then the medical journals bear testimony of its indorsement by Powell,[4] Phillips,[5] Heath,[6] Bull,[7] Hand,[8] Gay,[9] Bennett,[10] A. M. Vance,[11] and many others.

Eminent surgeons, who were its opponents, are now teaching it in their clinics, and are strong in their approval of the method.

That frequent failures have occurred is beyond question.

To throw light upon the cause of some of these failures, and call attention to some of the errors which have led to them, is one of the objects of this paper.

After nearly ten years' experience with this operation we certainly ought to be able to assign it to its true place among our aids in the treatment of hernia.

Too much was expected of this operation by many of those who have undertaken to use it, and this was in a great measure due to the manner in which Heaton placed it before the profession.

It was quite natural that, with his cases in a private hospital, under his immediate control, and with an experience extending over many years, he should meet with greater success than could the general operator.

He makes no allowance for this in his writings, and for this reason alone some physicians have been disappointed in the results which they have expected to obtain.

Then, again, it has been put to unfair tests, as in the following instance, which occurred in one of our leading hospitals. The injection was made in a proper manner

[1] Transactions of the American Medical Association, May, 1852.

[2] Nouveau procédé d'injection pour la cure radicale des hernies, Union Médicale. vol. viii., Paris, 1854.

[3] Modifications Apportées au Trocart pour son Emploi à la cure radicale des Hernies par les Injections Iodées, Gaz. des Hôp., vol. xxxviii., Paris, 1855.

[1] John Wood, F.R.S., F.R.C.S.: Lectures on Hernia and its Radical Cure. London, 1886.

[2] W. D. Spanton: Immediate Cure of Inguinal Hernia by a New Instrument, Brit. Med. J., 1879. vol. ii., p. 323.

[3] W. B. De Garmo, M.D.: The Heatonian Operation for the Cure of Hernia, The Med. Record, February 7, 1880.

[4] F. D. Powell, M.D.: Heatonian Operation, Gaillard's M. J., vol. xxix., p. 551.

[5] W. H. Phillips, M.D.: Hernia, Toledo M. and S. J., vol. iv., p. 201.

[6] W. H. Heath, M.D., U. S. Marine Hosp.: The Heatonian Method for the Radical Cure of Hernia, Buffalo M. and S. J., vol. xx., p. 405.

[7] W. T. Bull, M.D.: Radical Cure of Hernia by Heaton Operation, The Med. Rec., vol. xxii., p. 541.

[8] D. W. Hand, M.D.: Radical Cure of Hernia, Heaton Operation, Trans. Minn. Med. Soc., vol. xiv., p. 101.

[9] G. W. Gay, M.D.: Heaton Operation for the Radical Cure of Hernia, Boston M. and S. J., vol. cvi., p. 25.

[10] E. J. Bennett, M.D.: Radical Cure by Heaton Plan, Weekly M. Rev., vol. viii., p. 493.

[11] A. M. Vance, M.D.: Two Cases of Heaton Operation, Louisville Med. News, vol. xvii., p. 321

we will assume, and the patient kept in bed for about one week. At the end of this time the man was placed upon his feet and requested to cough and strain, in other words, to force his hernia down if he could. It is needless to say that the patient's efforts were attended by success, and the operation was credited with failure. I speak advisedly when I say that there is *no* operation for the relief of hernia, at present known, which would stand this test. It is irrational to suppose that pathological changes which have been months, or even years, in developing, can be removed radically within a few days by a process which is so mild in character as the one under consideration.

Another error has been in operating upon old scrotal hernias, where the hernial sac and surrounding tissues are thickened and changed in character, anticipating a radical cure by a single injection. We must either modify the operation by repeated injections and longer confinement to bed, or exclude such cases altogether. It must be borne in mind that in these old neglected cases we have not only the dilated, shortened canal and thickened sac, which are predisposing causes to the recurrence of the hernia, but we have a funnel-shaped opening into the upper part of the canal from the abdominal cavity. This peritoneal depression, or pocket over the site of the internal ring, is persistent, owing to the slowness with which the neck of the hernial sac is obliterated, and during this time thorough and constant protection must be afforded by mechanical support. That the neck of an old hernial sac may become obliterated is shown by the fact that hydrocele not uncommonly occurs within the sac itself, and that even though it become larger than the hernial protrusion which originally occupied it, the fluid cannot be returned to the abdominal cavity.

This has occurred twice in my own practice following the cure of the hernia by injection, and I have seen another case following the cure of a femoral hernia. Oblique inguinal hernia of recent date, where few pathological changes have taken place, is, of course, the most readily cured by this method.

Those children who do not obtain a cure by means of a truss during the first year of treatment, are frequently cured without difficulty by the aid of the injection. That many errors have been committed in the performance of this operation I have had abundant evidence. Perhaps the most frequent error has been in making the puncture through the scrotal tissues instead of directly through the integument over the external ring.

There are two reasons why this should not be done, the first of which is that swelling of the scrotum and testicle is quite likely to occur, to the discomfort of the patient and the risk of a successful result. This is probably caused by the fluid following the needle as it is withdrawn, an inflammatory action being much more readily set up in the scrotal tissues than in those about the canal.

Another reason why this method of introducing the instrument should be avoided is, that when the hernial sac is of large size and is adherent, the injection is more likely to be deposited in its interior than outside of it.

I agree with Heaton that this accident will not be attended by any bad results, nor will much, if any, good follow, as the action of the irritant must be upon the canal and not to any extent upon the sac. In invaginating the scrotum the adherent sac is also invaginated upon the finger, and when the puncture is made it is through the fundus of the sac as well as through the scrotal tissues.

Heaton's instructions on this point were clear, and, as a rule, should be followed. He says:[1] "Invaginate the right forefinger in the scrotum and find the external abdominal ring, then with the left forefinger press perpendicularly upon the integument directly over this ring, and use sufficient force to, if possible, press the integument with the finger directly into the ring. The left forefinger being at or in the ring, the spermatic cord and the sac, if in the way, are to be pushed to one side so that nothing may remain between the external pillar of the ring and the finger, except the integument and subjacent superficial fascia."

The instrument is then passed quickly into the canal. With the exception of one or two details I have followed the method described. Respecting the disposition of the cord and sac during the insertion of the needle I differ with Heaton.

As will be remembered, the spermatic cord lies in a groove in that part of Poupart's ligament which forms the external pillar of the ring. In order to enter the canal without injury to the cord, the latter must be lifted out of this groove to give room for the needle. I have found it more convenient to hold the sac and cord to the outer side instead of toward the median line. The beak of the instrument then passes between the finger and the internal pillar of the ring, the sack and cord being between the finger and external pillar.

One other precaution has, I think, saved me considerable trouble. After making the injection, on withdrawing the needle, and some moments after, I make firm pressure over the external ring. The object of this is to prevent the return of the fluid in the track of the needle, and to retain it entirely within the canal, until it becomes distributed upon the tissues inside of the ring.

Other operators have complained of small abscesses following the operation, and as this has never occurred in a single instance in my own practice, I can only attribute it to the precaution named. Some operators in this country and England have thought best to lay the parts open and smear the structures with the Heaton fluid. This seems to me an unnecessary and unadvisable proceeding, adding to the risks of the operation with no advantage gained. If there is any merit in it, let us use it without adding the dangers of a cutting operation. So far, in the hundreds of injections made, no death, nor even serious complication, has been met with; while, according to reliable authorities, a mortality list of seven per cent. or more follows the open operations at present in use.

C. B. Keetley,[1] an eminent English writer, in a valuable paper upon this subject, speaking of the dangers of the cutting operations as at present practised, says: "Many operators of limited experience can still show a virgin record; but I believe that twelve per cent. would not be an exaggerated estimate of the deaths directly due to the open operation for the radical cure of hernia." According to the results of his study of statistics, which appear to have been carefully and impartially made, there is a mortality risk of only 2.5 per cent. to those afflicted by inguinal hernia who rely exclusively upon mechanical support. If the conclusions arrived at be true, then, in subjecting these cases to operation by the open method, we are adding nearly ten per cent. to the mortality risks of the patient. With the oak-bark injections a better record can be shown. No additional risk is incurred, a certain amount of benefit is sure to ensue, and, if the operation is properly done, followed by judicious after-treatment, the percentage of absolute cures will equal those following any operation at present known

In operating I have usually used the hernial syringe bearing my name, a description of which was given in THE MEDICAL RECORD of February 7, 1880. It has since that time been somewhat modified and improved, and has, in the hands of other surgeons as well as my own, proven satisfactory. Its main peculiarity lies in the fact that its cutting point is protected after entering the external ring, and that in the form of a blunt probe it can be carried higher up the canal than one would care to introduce a sharp-pointed instrument.

[1] G. Heaton, M.D.: The Cure of Rupture, p. 40. 1877.

[1] C. B. Keetley, F.R.C.S.: On the Comparative Dangers of leaving a Hernia to the Protection of a Truss and of Attempting its Radical cure; and on the Indication of Preferring one Mode of Operating to another, according to the Case, Brit. Med. Jour., 1885, vol. ii., p. 1054, London.

In this operation I believe that the subsequent management of the case is fully as important as the manner in which the injection is made. The restorative process begins with the introduction of the irritant, but it is by no means completed when the patient is allowed to resume his active duties. The obliteration of the neck of the hernial sac, which remains unreduced in most cases, is a slow process, and until this is at least partially accomplished, to remove the support is only to invite a return of hernia. On the other hand, too strong pressure must be avoided, as tending to weaken the tissues which it is our aim to strengthen.

During the confinement to bed, which should be at least five to seven days, and, as previously stated, a much longer period in extreme cases, I have usually used the bandage described by Heaton. In some cases, however, I have found it inefficient ,and have resorted to a truss which I devised especially for night use. This consists of a metallic spring across the front of the abdomen, to which such pads as may seem best suited to the case are attached. The spring terminates over the front of each hip, and is held in place by a webbing band around the back.

After the operation I apply this truss and put a light bandage over it. This combination is more secure than the bandage alone, and can be worn subsequently instead of a regular truss.

In a paper which I read before the Surgical Section of the Academy of Medicine last March,[1] I called attention to a modification of Heaton's operation which I believe to be important. I refer to the repeated injection of small quantities of the Heaton fluid without confinement to bed. This method is, of course, only adapted to those cases which can be fully controlled by means of the truss, and it is more especially in connection with skilled mechanical treatment of hernia that it will prove valuable. The patient is first supplied with a truss which can at all times be relied upon to retain the hernia. An injection of from five to ten drops of the Heaton fluid is then made in the usual manner, the truss carefully reapplied, and the patient allowed to go about his ordinary duties.

In some cases detention from business on the following day may be best, owing to the soreness of the parts; usually, however, even this is not necessary. One man, whom I cured by five injections, was a laborer in a foundry, and did not lose an hour from his work. These injections should be made at intervals of about two weeks, and at least four or five different times. The quantity of fluid used must be regulated, to quite an extent, by the amount of soreness established upon the first injection. It should not be repeated while any great amount of tenderness remains. I have found many patients willing to submit to this plan of treatment who could not give the necessary time from business to have the regular Heaton operation done, and I have also found the results even better than I had anticipated.

After an experience of seven years in the use of the Heaton operation, during which time I have used it upon over one hundred cases, I feel justified in claiming for it:

First, Freedom from danger.

Second, That about forty-five per cent. of all cases can be cured by it, and in selected cases an average of seventy-five per cent. can be obtained.

Third, That many extreme cases, uncontrollable by means of a truss, can be brought under control by its aid.

Fourth, That it is followed by improvement in almost every instance.

Fifth, That children who have not been cured by mechanical means can in almost every case be cured by this operation.

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[1] W. B. De Garmo, M.D.: The Palliative or Mechanical Treatment of Hernia; with a Brief Report on Repeated Injections of Oak-bark, without Confinement to Bed, The Medical Record, April 3, 1886.

THE THERAPEUTICS OF MINERAL WATERS.[1]

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In what I have to say I shall speak first of the general question of the value of mineral waters as a means of cure, and second, of the ailments that are fitted for treatment at special springs.

1. The allied subjects of mineral waters and of climate, in spite of their close therapeutic association, have received very unequal attention at the hands of the profession in this country. The curative values of climate have been fully and ably discussed. More than one member of this Academy has made important contributions to our knowledge of the subject; the names of Clark, Metcalfe, Barker, Loomis, among others, are inseparably associated with the best that is known and practised in that important branch of medicine that deals with the choice of climates for invalids. The study of this branch of the subject was a study which could not well be avoided; it was, indeed, in a measure forced upon us by the defects of our American climate, which have made it necessary for us to understand other climates than our own. And aside from the strictly therapeutic questions involved, our increasing habit of European travel gives new importance to the question whither to direct both the healthy and the invalid. Those who seek their health abroad are outnumbered by those who seek to preserve it.

The importance of climatic studies, in a word, is well understood among us. For large classes of invalids it cannot be denied that the United States furnish a very inferior article of climate. Whether as tourists or health-seekers, the public has long been in search of better climates than our own; and it is not necessary to make any plea for the study of climato-therapeutics.

But has equal attention been given to the allied subject—one that is of equal importance to the invalid and to the profession—the subject of curative mineral waters? No; a like degree of attention has not been given, though the profession and the public are indebted to more than one among the names that I have mentioned for valuable studies and advice upon this matter. But if we examine our balneological literature as a whole, we shall find it conspicuous, if I may say so, only by its minitude. It is extremely deficient. The foreign literature of the subject is extensive and systematic; but against the learned treatises of Trousseau, Braun, Durand-Fardel, Rotureau, Hellft-Thilenius, Leichtenstein, we shall find but little to put in evidence, in the way of practical manuals at least, except the useful monogram of Dr. George E. Walton on the "Mineral Waters of the United States and Canada." And, to say nothing of systematic treatises, the French and German physicians have produced a multitude of monographs upon special waters—monographs that are often works of great original research and value. The accessible data of the subject are so abundant that the "embarrassment of riches," as the French say, is their chief inconvenience. It will require no long survey of the literature of the spring-cure in all its forms—whether by baths, drinking, or regimen—to show that our French, German, and Italian colleagues have accorded to this important subject, which they call balneo-therapy, a prominence which neither in theory nor in practice has it yet received among us.

But it must be admitted that in therapeutics the amount of attention given to a subject is not always, even in expert or professional hands, the strict measure of its real importance. Is the vogue of mineral springs abroad merely a vogue, a fashion, and nothing more? Which view is the more nearly correct—the foreign view, that mineral springs afford a real and important resource in the treatment of chronic disease, the view that is, I may

[1] An address delivered before the New York Academy of Medicine, December 21, 1866.

say, almost universally held by the profession abroad; or the view which we still hear expressed at home, though less frequently by physicians than by laymen, that mineral springs are greatly overrated as a means of cure?

The claim of mineral waters to a real or serious value in our therapeutic armamentarium is an occasionally contested claim. It is still met, even by some members of the medical profession, with a more or less enlightened scepticism. A healthy scepticism is, indeed, the legitimate mental attitude of the physician; to him, in therapeutics, the injunction to "prove all things," comes with especial meaning and seriousness. Of all men the physician should be the last one to believe too readily. And I confess myself to be by temperament one of the most sceptical as regards the matter of fashionable provings in remedies. For this reason, my own belief in mineral waters, after many doubtings, may perhaps have some interest as a case of genuine conversion. Considerable observation and study of these remedies, at home and abroad, have convinced me of their value in properly chosen cases; so fully, indeed, have they convinced me, that I sometimes incline to think that when St. Paul, after saying "Prove all things," added, "Hold fast that which is good," the apostle might have had certain mineral springs in view.

The common argument against mineral waters is familiar, namely, that the curative effects observed to follow their use are due to change of climate and to regimen, and not to the waters themselves. Even if this were a sufficient explanation, it would not lessen the value of spring treatment as a total effect. No fact of observation is more familiar than that thousands of chronic invalids who go to the springs come away cured. Such a patient may call it the waters or the regimen, but he will say, with the patient at the Pool of Siloam, "One thing I know—that whereas I was blind, now I see." The change of outward environment is certainly an important part of the cure, but it is by no means all. A large proportion of the waters used are actively medicinal. The arsenical waters of La Bourboule, for instance, the bitter Hunyadi Janos, some of the stronger of the Saratoga waters, can only be taken with advantage, or indeed with safety, in small doses. Nearly all of the calcic waters and many of the saline are most imperatively purgative. For better or for worse, they are at least active medicines. It is they primarily that produce the physiologic effects that are noted; it is idle to ascribe laxative results to landscapes, or a liver-cure to a new social environment. A changed dietary may, indeed, have its effect, but it is not the sound of cowbells or the sight of glaciers that produce fluid stools. It is the waters, not the skies, that make the treatment in places like La Bourboule, Carlsbad, Vichy, Royat. Travel and change do much, but not all; *Cælum, non cœcum, mutant, qui trans mare currunt.* The physiological effects—tonic, alterative, reconstituant, or depressing—are facts which neither physician nor patient will question. The various waters which produce them make up the therapeutic gamut from which the physician seeks to combine the harmony of health.

The range of the effects of mineral waters is a wide one. Referring them as medicines to the excellent classification of our colleague, Dr. Wm. H. Thompson, they come, for the most part, under the class of Disease-medicines, or medicines for diseases or morbid conditions, rather than Symptom-medicines. Under the former general class they occur either in the division of Restorative medicines, containing the ingredients of the system or substances analogous to those ingredients, as many of the alkaline, iron, and other tonic waters; or in the division of Specifics, or disease-medicines unnatural to the system, as the so-called "alterative" mineral waters, of which the arsenical waters of La Bourboule are a type. But some of the most important of the mineral waters are found under the second main class—that of Symptom-medicines—and under the second division of that class—that of Eliminative or Glandular medicines. To this class belong most of the many cathartic and diuretic waters. Under each of these classes there is no doubt that very many excellent waters are available for the cure of disease, especially among the alkaline waters, which contain the elements of the serum of the blood, and some of these waters in the accurate proportions given in the blood.

It is true that the vogue of remedies is not in itself a proof of their value, if we take into account only a comparatively brief experience. But in this case there can be small question of mere vogue or fashion; it is a question of over two thousand years of use and frequentation. Many of the French, German, Italian, and Spanish springs that are the most highly prized to-day were frequented and highly prized by the Romans, and some of them by the native tribes that preceded the Romans, as in the case of some of the springs of Auvergne. During that great calamity to civilization, the downfall of the Roman Empire, the mineral springs of Europe were, for the most part, forgotten, and their splendid establishments fell into ruin. Throughout Southern and Western Europe their remains are still to be found in many places; and in some spots, as at Plombières, they will show you what they claim to be the plumbing of the fifth century, constructed, I dare say, upon principles now quite antiquated. But from the time of Hippocrates to our own, no other class of remedies has better held the confidence of physicians and of the public than those which we are now considering. Fashion has undoubtedly played her part in the case of individual springs; some that were once famous are now abandoned, or nearly so—a thing that has happened more than once in England, where, more than in other European countries, the aristocracy sets the fashion. But this fate has very seldom befallen springs of really positive medicinal quality. The great springs of the Roman time are great springs to-day, and a multitude of newer waters have been added to the long list of "cures," as the Germans, with cheerful and not ill-founded confidence, are in the habit of calling mineral springs in general. It will be enough, perhaps, to remark that in France alone the number of separate springs that have establishments is about two hundred, France possessing more known springs and more establishments than any other country, though unfortunately they are less known outside of France than they should be. In Germany the number of springs and of establishments is not very far behind. And at all the principal resorts, both at home and abroad, the number of patients steadily increases from year to year.

2. And now let us ask, to what classes of disease is treatment by mineral waters adapted? Whether at home or, preferably, at the spring itself, with the adjuvant influences of changed climate, regimen, scenery, and surroundings generally, who are the sufferers that may expect relief or cure from mineral waters?

3. The converse question, and a very distinct one, is equally important: To what particular spring, in the particular case, shall the physician send his patient?

Experience gives full answers to each of these inquiries. To one of them the answer will be anticipated. Treatment by mineral waters is adapted to chronic diseases only; but to all, or nearly all, such diseases as have any quality of curability about them. Ailments that have proved reluctant to other forms of treatment, however long their standing, often find relief or cure at the rightly chosen spring.

And what are the chronic diseases that are not incurable? The list is a very long one, too long to be recited here. From it we must exclude, of course, malignant diseases, and in their advanced stages phthisis, Bright's disease, and diabetes. Much the greater part of the chronic diseases that remain are adapted to spring treatment; this, in a word, is suitable to nearly all chronic invalids who belong to the curable class—a class which our friends, the surgeons, sometimes claim as forming the distinctive and appointed province of surgical as distin-

guished from medical art. Let me recall here a reminiscence of James Syme, the famous Scotch surgeon, at whose clinic, at the royal infirmary in Edinburgh, I found myself, fresh from hospital and naval service, one morning a good many years ago. After the last patient had been dismissed, and I had been duly introduced to Mr. Syme, he said, "You have very learned medical men in New York, and skilful surgeons. Pray tell me how you discriminate medical cases from surgical cases over there?" To this question I gave the best answer I could, the staff assistants listening with curious interest to the stranger. "Very good," cried Mr. Syme, when I had done, "very good indeed; but now let me tell you how we distinguish medical and surgical cases here in Edinburgh. Any case that admits of either relief or cure we call a surgical case. All cases that admit neither of relief nor cure we call medical cases." This was a surgeon's definition. If we should adopt Syme's distinction, we should send nothing but surgical cases to Saratoga, Carlsbad, Vichy, Royat, and Ems. But, in point of fact, I have sent more medical than surgical cases to springs at home and abroad.

There are enough cases that are intractable to home treatment, and that are still not incurable, to make it well worth our while to classify them, if not to enumerate them at length. In the table of contents that is prefixed to his learned treatise on balneotherapy, Helfft gives four closely printed pages of the names of ailments that he describes as suitable to treatment by mineral waters. The simpler their classification the better.

My own classification is made entirely for working convenience. It is as follows: I divide the diseases that are amenable to treatment at mineral springs into—1, diseases of the digestive organs; 2, diseases of the nervous system; 3, diseases of the respiratory tract; 4, diseases of the uterine system; 5, diseases of the urinary system; 6, skin diseases; 7, general diseases or diatheses. Under each of these heads I will indicate (*a*) the main ailments which are amenable to the mineral-water treatment, and (*b*) some of the particular springs at which the ailments in question should be treated.

1. Diseases of the digestive organs. This is much the most numerous class of all the diseases that we find at the springs. Indeed, it is probably quite as numerous as all the rest put together. At Saratoga, at Vichy, at Carlsbad, at all the more fashionable spas of both hemispheres, the majority of the patients are sufferers from some form or other of digestive derangement, and these derangements are usually, in the case of the European patient, the result of overeating and overdrinking; and often, if not usually, of hasty as well as of excessive eating in the case of the American. The specific diseases chiefly treated are dyspepsias, catarrh of the stomach and of the intestinal canal, enlarged liver, fatty liver, gall-stones, ulcer of the stomach, and enlargement of the spleen.

For the treatment of this wide range of complaints, a great number of mineral springs present themselves; and among them choice must be made—1, according to the type of the disease; 2, according to the need of the individual case. For acid dyspepsias the typical waters are Vichy, Carlsbad, Ems; and at home, those of Saratoga, the Capon, and the Buffalo Lithia Springs. For atonic dyspepsias the patient must preferably employ one of the saline waters, as Salins, or Salins-Moutiers, in France, Kissingen in Germany, the Hathorn or Ballston Springs at home. Stubborn dyspepsias of whatever type that have gone on into gastric catarrh, properly so called, with inveterate gastric lesions, require the glauber-salt waters, as Carlsbad and its congeners—Marienbad, and Tarasp in the Grisons.

2. Next come diseases of the nervous system, as chorea, epilepsy, hypochondria, hysteria, chronic myelitis, paralysis in some but not in very many cases, and many cases of so-called general nervousness and neuralgias. Hypochondriac and hysteric patients often receive the greatest benefit at a well-chosen spring, the entire change of environment, spiritual and physical, seldom failing to produce prompt and often radical benefit.

The number of the springs that are adapted to the treatment of nervous diseases is even more numerous than that of the varieties of the diseases themselves. Royat, Néris, Bagnères de Bigorre, Guillon-les-Bains, in France; Teplitz, in Bohemia; Wildbad and Schlangenbad, in Germany—these are waters that will certainly minister, at least, to a mind diseased, when they do not absolutely heal it. Shakespeare knew nothing, so we must presume, of mineral waters, for he makes no reference to them in the whole range of his writings—the writings that reflect so much of the knowledge of his time. But Shakespeare, happily for us, was the healthiest of men and of poets. Had he known gastric catarrh, for instance, he would surely have gone to some neighboring mineral spring—not to Leamington, the nearest spring, for Leamington was not known until the end of the eighteenth century; but Buxton and Bath, to which latter place Queen Elizabeth resorted, were already popular; and if Shakespeare had gone to either spring, he would have written the "Dyspeptic's Complaint," instead of the "Sonnets."

3. Diseases of the respiratory tract, especially chronic laryngitis, bronchial asthma, the earlier stages of phthisis, and that ill-omened distemper post-nasal catarrh—the national disease, and one which has brought reproach upon our national manners—come next in order. Let me say, in passing, that while the world has reproached us with expectoration, its blame as against the national manners is quite unjust. The blame lies with our climate and our dirty city streets. These cause catarrh, in greater or less degree, in probably forty per cent. of individuals who are over twenty-five years old. It is in no mere unscrupulousness of expectoration, as foreigners assume, that the real cause of this evil exists. For post-nasal catarrh the patient should go to Aix or Mont-Dore; but energetic local treatment in addition is sometimes needed.

The treatment of laryngeal and of pharyngeal troubles has been much attended to of late years at the Continental spas. Aix, Ems, Royat, and the leading springs of Auvergne and of the Pyrenees are the chief places of resort. In Auvergne, and also in the Vosges, I found in the summer of 1885 extremely complete and elaborate appliances in use for the local exhibition of mineral waters, by spraying or pulverization, in the treatment of various diseases of the respiratory passages—a form of treatment that has been introduced of late at some of our home springs, though in but few as yet. There is no doubt of the efficacy of this mode of treatment in many cases. For laryngitis, or "clergyman's sore throat," I choose among the sulphur waters rich in sodium, or the alkaline, with chloride of sodium. Eaux Bonnes, Ems, Obersalzbrunnen, Neuenahr, Selters, Sharon Springs are typical and excellent waters of these kinds.

For beginning phthisis in nervous and sanguine temperaments, treatment at Mont-Dore, at Ems, at Salzbrunnen, at our own Red Sulphur Springs in Virginia, is to be preferred. In the phthisis of scrofulous temperaments the springs of La Bourboule are especially useful. For torpid scrofula, Salins, Kreuznach, Ischl, Kosen, Bourbonne-les-Bains, Rockbridge Alum, Greenbrier Springs are indicated; and any of our stronger saline waters at home. For irritable or "erethic" scrofula, La Bourboule, St. Nectaire, and other springs of Auvergne.

4. Diseases of the uterine system. Among these may be named uterine catarrh, amenorrhœa, dysmenorrhœa, and metritis; these are all suitable for treatment at mineral springs, and they are all relieved or cured, and sometimes with them the resulting sterility at a properly chosen station. In Austria, the springs of Franzensbad are famous for the cure of this class of ailments; in France, Bourbon-Lancy, Plombières; in Germany, Pyrmont, Elster, Schlangenbad, and the Bubenquelle at Ems; of our own waters, Capon Springs and the Buffalo

Lithia No. 2, among other tonic waters, are excellent. For cases of obstinate morning-sickness the waters of the Irondale Springs have been prescribed with good results.

5. Diseases of the urinary system form an important branch of the treatment by mineral waters. Chronic catarrh and rheumatic affections of the bladder, urinary calculus, and sometimes Bright's disease in its early stages, are amenable to this treatment. In uric-acid or red gravel, the most frequent form, and in oxalic gravel, as Trousseau has pointed out, the alkaline waters should be chosen: Vichy, Carlsbad, Ems, Neuenahr, Buffalo Lithia, Capon Springs, Gettysburg "Catalysine." For alkaline gravel I prescribe the calcic waters. Clysmic is one of the best, and it is also a very pleasant table-water.

6. For skin diseases the sulphur and arsenical springs offer a vast field of choice, according to the character of the case. But here we come upon debatable ground; some authorities, like Braun and Hebra, among others, contending that skin diseases do not yield to the treatment by mineral waters. But therapeutic art is nothing if not practical, and experience shows us that a great number of patients come every season to the springs with chronic dartrous diseases who go away from the springs relieved or cured. If they are not cured by the springs, they are certainly cured at the springs, and the exact nature of the distinction is one in which the patient at least will not take much interest.

7. General diseases or diatheses, as chronic gout or rheumatism, scrofula, anæmia, obesity, are often cured at a well-chosen spring.

The anæmia of the scrofulous diathesis is to be treated at a saline water, as at Salins, or Salins-Mouthier in the east of France, or at the Hathorn Spring of Saratoga. The anæmia of exhaustion requires, on the contrary, the effect of an iron water; it will best be treated at such a place as Bussang in the Vosges—a spot so beautiful and quiet as almost to make one desire a sufficient degree of anæmia for himself and his friends as to justify one in taking up his abode for a time among those enchanting hills.

For constitutional anæmia the reconstructive and tonic waters are needed, in conjunction with such diet as will restore the lacking elements of the blood. Beef-peptonoids for the anæmia of dyspepsia; gluten bread and whole-wheat bread for that of diabetes; cod-liver oil and milk for that of the phthisical diathesis, are indicated. The springs of Auvergne, and of Salins, Luxeuil, and Bussang, in France; Franzensbad, in Austria, and the Columbian Spring at Saratoga will bring relief or cure when used with these adjuvants. When chlorosis accompanies constitutional anæmia, the contrasted influences of Alpine resorts and sea-bathing are alike useful.

Such, briefly, are the main classes of disease which we may rationally hope to relieve, and sometimes to cure, at the rightly chosen spring. It is not possible, in the brief time at my disposal, to indicate much more than the general types of ailments, the general classes of springs at which a cure may be sought. Still less can I enlarge in this place upon another order of conditions which, as I have said already, and wish to say once more, are scarcely less important to the cure than the right choice of the mineral waters themselves. I mean the external or the extra-medicinal conditions of the place, as hamlet, village, town, or city; the nationality and the social condition of the people whom the visitor will meet; the advantages of scenery and attractive environs; the *personnel* of the guests and of the physicians; and, not least of all, the kind of hotels, boarding-houses, and furnished rooms which he will find. Most of these conditions, though I have called them extra-medicinal, are very directly related to the cure of the invalid; and most of them can only be well understood by personal acquaintance with the places in question. I do not underrate the purely medicinal side of the question; it is all-important; and yet no part of my own studies in mineral waters has been better repaid than the visits that I have made to many of the leading springs. In a word, it is not enough to say to the patient, This is a good mineral water; it is not enough, even, to say, This is a water that is suited to your case. The physician must be able to say also: Not only the waters, but also the climate, the country, the people, the local treatment, the hotels and boarding-houses, the ways of living, the place as an entirety, are suited to your particular case. When the physician can know these things the cure of his patient is not far away. And he can know all of these things only by personal inspection. All of these collateral points should be, as far as possible, familiar to the consulting physician on whom the grave responsibility devolves of sending the patient far away from home, and who clearly recognizes that the waters are by no means all in themselves; that these complicated and delicate remedies depend for their success, in no small degree, upon the right selection of the conditions under which they are used.

To recapitulate: Three different things must be clearly known, in respect to each patient, before he is sent to a mineral spring. What are these three things? They are, first, the patient's disease; second, the mineral water that is medicinally adapted to the treatment of that disease; and, third, the hygienic, social, personal, and living or commissariat conditions of the place to which the patient is going.

I have one remark to add. I think that treatment by mineral waters, both at home and abroad, is destined to increase greatly within a few years from now; and I believe that that increase is to take on a sort of reciprocity or international character as our own excellent native waters become better known abroad. They will become better known as our establishments are developed and made more attractive; when that is done—when we come to have more of such admirably appointed establishments as the Sanitarium at Dansville, N. Y., for instance—I look for European invalids to frequent our waters as we have learned to frequent those on the other side of the Atlantic; with the illustration of Saratoga in view, it is not necessary to say how attractive an American watering-place may be made. The only lack at Saratoga is the willingness to submit to scientific treatment. A number of other domestic springs, especially in the Eastern States and in Virginia, have received all of the outward development and perfecting that are required to make them charming places of resort. But for the greater part of our springs much remains to be done. Much remains to be done not only in the way of outward perfecting, in the construction of hotels and establishments, but in equipping them as true places of healing, and in making them regarded as a serious means of cure. They are so regarded abroad, and with reason, as I have tried to show. They are less so regarded with us, and more regarded as places of recreation; and this is an unfortunate, because an insufficient, view of their values. Mineral springs are most potent, if delicate, remedies; and the danger is that their real therapeutic value may be overlooked by the public if it is not sufficiently insisted upon by the profession, and that they may lose the vogue that they deserve—a thing that has already happened to at least one very deserving spring in this part of this State.

The fitting development of our excellent but still undeveloped springs presents, in my opinion, a field both to professional and to business enterprise that is second to none. Virginia, for instance, is but one among several States in which there are excellent springs that have in past times been popular, and may be made popular again, but which through mismanagement of one kind or another have now lost their vogue; and this decline, I would say in passing, has generally been due in part to a very easily avoidable cause, which I have not yet mentioned. It has not been due to any demerit, real or fancied, in the waters themselves; it has not been due to insuffi-

cient skill in the attending physicians, though, as I have said, we do not as a community give such high medicinal rank to spring treatment as it undoubtedly deserves. No; it is a more trivial cause than either of these, and yet one that is quite sufficient to disperse the stoutest-hearted colony of settlers, especially if those sojourners be dyspeptics—and that cause is bad cooking. A poor *cuisine* will put to flight the most courageous invalid. A good *cuisine* must go with a good spring, or success will not attend the management. One great secret of the popularity of the French springs is the attention given to this important point. Even at the newest establishments, as at Martigny and Bussang, an exquisitely appointed *cuisine* has appeared from the first, and dining-saloons have risen from the ground like the dinner-tables of Beckford or of the late King Ludwig of Bavaria. These things, in connection with a competent medical direction, and a serious medical and hygienic treatment, have not yet reached that satisfactory development at our springs that they have found in the older countries of Europe. But this development will come in time, and foreigners will then seek American mineral springs for the same reason that we shall long continue to seek the springs of Europe, for the conjoined and manifold benefits of a completely changed environment.

The domestic use of mineral waters is an important subject for the many persons who cannot leave their homes for treatment at the springs. I have discussed it in a paper to appear elsewhere, and I will not here enter upon it at length. It is enough to say that such domestic use is often very helpful to the invalid. The home use of mineral waters will seldom, indeed, adequately replace the trip to a mineral spring; the reasons for this I have already pointed out, in the different circumstances of life at a spa, in the relief from home anxieties, and in the almost invariably stricter medical supervision abroad than at home. All these postulates of spring life must make it the preferable means of treatment. Yet for many the home use of a rightly prescribed water is a valuable cure. And not only are the natural mineral waters valuable when taken at home, but some of the artificial waters also, as Schultz's and the various hygeia waters, which are the best among many. All these offer an undoubted resource.

One caution, finally, is to be borne in mind by the patient. Mineral waters, though delicate, are powerful remedies. They are not to be taken at the patient's choice or whim any more than other medicaments. That they are often self-prescribed is a main cause of their slow recognition by our public. The American tourist likes to prescribe for himself; he likes to choose his own spring when he will and where he will; he insists on eating, drinking, exercising, amusing himself, or abstaining from all of these things, as he alone may elect. I need hardly say that the latter state of that invalid is apt to be sevenfold worse than the first.

It is the physician's duty to check this undue liberty. Rightly chosen, rightly prescribed, and under the right conditions, the mineral springs of our own country, intrinsically as good as any of those of Europe, are among our most valuable remedies in chronic cases. After other remedies have failed they will often bring relief or cure. Let us claim for them and restore to them their true value.

THE LATE PROFESSOR POST.—Dr. S. Haynes writes that in the winter of 1852–53 he witnessed the reduction of a dislocation of the cervical vertebræ by Dr. A. C. Post. The man was placed on the operating-table, and by means of extension and counter-extension, with a little manipulation, the dislocation was readily reduced. He adds that Dr. Post was known as a stanch temperance advocate, and says that it was currently reported among the students at that time that he had voted against the granting of diplomas to fifty students at the previous session on account of their intemperance.

Clinical Department.

REMOVAL OF THE UTERINE APPENDAGES.

DR. WM. B. BLACKSTONE, of Hebron, Ind., reports the following cases: "1. Mrs. E. J. W——, aged twenty-nine, and married nine years, has had two children and one miscarriage, the latter occurring in September, 1882. Since that time she has had constant backache, painful micturition, headache, loss of appetite, constipation, and a peculiar throbbing, boring, burning pain in the right iliac region, and on the right side of the uterus a constant, dull, heavy ache. The menstrual periods occur regularly, but are attended with a profuse flow, great pain, and considerable elevation of temperature. They last from six to eleven days, and during the past year there has been a yellowish discharge, of an offensive odor, from the vagina. The uterus is congested, retroflexed, and slightly enlarged, any attempt at replacement causing intense pain. The right ovary is enlarged, exquisitely sensitive, and prolapsed into the retro-uterine cul-de-sac. After six months of persevering treatment, without relief, an operation was proposed—the dangers and the probable benefit being fully explained to the patient—and was consented to. The operation was performed on May 19, 1886, both tubes and ovaries being removed without much difficulty. There were no adhesions of any consequence on the left side, but on the right side there were broad and firm, but non-vascular, bands connecting the tube with the uterus and ovary. The cavity was thoroughly cleansed with warm water, the wound closed with silver and catgut sutures, and the usual dressings applied. The patient made an excellent recovery. The inner portion of each ovary was occupied by a large cyst containing a dark fluid, and the outer portion was marked by several nodular projections, consisting of dense fibrous tissue. Both tubes were tortuous, enormously distended, and filled with a greenish fluid, seen, under the microscope, to contain pus-cells.

"2. Mrs. L. McA——, aged thirty-seven, has had nine children and three miscarriages. She has constant backache, a dragging sensation in the pelvis and thighs, and a heavy, boring pain in the iliac region on either side of the uterus. Before each menstrual period there is a discharge of pus from the vagina, after which there is some alleviation of the symptoms. The periods occur every three weeks, and each one is ushered in with a chill, followed by a fever of several days' duration. The flow continues about ten days and is very copious. There is a bilateral laceration of the cervix extending back to the vaginal vault. The endometrium is studded with a fungous growth. The uterus is large, sensitive, and bound by strong adhesions posteriorly. The appendages on either side are thickened and sensitive. The patient is anæmic, and has been bed-ridden for the past eight months. The operation was performed on June 29, 1886. Before the administration of the anæsthetic, cocaine hydrochlorate was given by the mouth to prevent nausea. The operation consumed one hour and thirty minutes, being prolonged by reason of the extensive adhesions which bound down the ovaries and tubes, making their removal extremely tedious and difficult. The omentum was adherent to the anterior surface of the uterus, but the two were easily separated. The uterus was, however, firmly bound down by other adhesions and could not be raised. The left tube and ovary were first removed. The right tube and ovary were buried in a mass of adhesions. After these were broken up, the organs were raised and ligated off, but the stump was so rotten that the ligatures cut through, and each artery had to be caught and tied separately. The wound was closed by silver and catgut sutures. In three weeks after the operation the patient was sitting up. The right ovary was enlarged and its surface was marked

with cicatrices and numerous small cysts. On section its interior was found to consist of one large cyst filled with a thick, gummy, translucent material. The tube was large, folded on itself, adherent everywhere to the ovary, and contained pus. The left ovary was small, but was found to contain a cyst filled with the same material as the right. The tube was large, distorted, and bound down to the ovary. Both tubes were soft and friable. It is now six months after the operations, and both women are rugged, robust, and in perfect health." Dr. Blackstone concludes: "That the operation is a justifiable one in all intractable cases of this kind there is, to my mind, no doubt. And in the future, I am inclined to think, it will be performed oftener than it now is; for in it is offered the only means of cure to a very large class of unfortunate women."

Progress of Medical Science.

THE SURGICAL RELATIONS OF THE ILEO-CÆCAL REGION.— Under this title Dr. J. McF. Gaston, of Atlanta, Ga. (*The Journal of the American Medical Association*, October 9, 1886), considers the frequent derangements of the ileo-cæcal region. As a result of his investigations he formulates the following conclusions: "First, certain modifications are corrected spontaneously, or by the process of resolution under treatment. Second, in the earlier stage of ileo-cæcal disorder, medicinal or mechanical measures are advantageous. Third, extra-peritoneal punctures and incisions are beneficial in cæcal inflammation, with or without fæcal abscess. Fourth, disorders involving the peritoneum, when not promptly relieved by general treatment, warrant exploratory opening of the abdomen. Fifth, impediments of the intestinal canal, or morbid accumulations in the abdominal cavity, accompanied by meteorism, call for immediate surgical interference, with laparotomy. Sixth, in case of simple stenosis or malignant growths involving the ileo-cæcal connections, ileo-colostomy is indicated. Seventh, gangrenous portions of the intestinal canal necessitate resection, and either direct restoration by suturing the ends or the formation temporarily of an artificial anus. Eighth, operative measures in ileo-cæcal derangements should not be delayed until the physical powers have become prostrated, but resorted to while there is capacity for reaction of the vital forces.

ABDOMINAL PREGNANCY TERMINATING BY ULCERATION INTO THE RECTUM—RECOVERY.—Dr. Browne reports this remarkable case in *The Lancet*, October 2, 1886: "E. J——, aged forty. Has had ten children, the youngest being five years old. Has not had any miscarriages, and gives no history of previous disorders in the organs of gestation. She had last menstruated in November, 1884 (seventeen months previously). She believes herself to have been in her usual good health, and does not remember to have had any fright about that time. In the course of a month or so she began to suffer from metrorrhagia, which continued, and led her to seek advice. On examination, a tumor was found upon the left side of the abdomen. From its position and feeling it was diagnosed as ovarian, and it was also suggested to the patient that she was pregnant. The metrorrhagia continued, more or less, until in September, 1885, or at what would be about the full period of pregnancy, a pseudo-labor took place, and an effort at lactation appeared in the breasts. About this time the patient began to notice that the tumor seemed smaller. She complained of loss of appetite, general ill-health, and pain and irregularity in the action of the bowels. This state of things continued until April last, or seven months after the pseudo-labor, when she was taken with violent forcing pains in the body and lower bowel, and offensive diarrhœa, in the course of which some fœtal bones were passed. Examination of the rectum disclosed the presence of the remainder of the fœtus. A hand was introduced into the bowel, the fœtal head crushed as far as possible with the fingers, and its fragments and other bones removed. The diarrhœa, and the occasional passage of a remaining bone, continued for a few days, gradually became less offensive, and then ceased. Within a fortnight the patient was able to leave her bed, and has since made an uninterrupted recovery. From the frontal bones removed entire, each measuring an inch and a half by an inch and three-fourths, and from the other cranial bones fitted together, the bi-parietal diameter was computed to be three inches. All the bones had the normal amount of ossification of a full-time fœtus. Points of interest in this case are: 1. The difficulty of diagnosis, though, looking back now, nothing can be clearer than the sequence of events. 2. The maturity and perfect formation at which the fœtus arrived. 3. The means taken by nature to remedy her error, and which resulted in perfect recovery."

COLD APPLICATIONS TO THE PRÆCORDIA IN FEVER.— Dr. Grigorovih has studied the effects produced by applying cold over the region of the heart in typhoid fever. His observations were made on uncomplicated cases of the disease. Respiration, at first, became somewhat quickened, and was rendered irregular by reflex action; subsequently it became slower. At the end of the application of the ice, and the next morning, it was deeper and more regular, but somewhat slower than before the ice was applied.

The general conclusions regarding the effect of applying cold to the region of the heart are as follows (*The Therapeutic Gazette*, October 15, 1886):

1. The cold undoubtedly reaches the heart itself, and thus produces an effect upon its action.

2. This effect is particularly noticeable when the cardiac beats are increased in frequency in consequence of a high temperature quickly attained, and where a certain degree of sensitiveness to a high temperature exists.

3. The effect of cold is not marked at the end of a prolonged attack of fever, pathological changes having by that time probably become established in the cardiac muscle.

4. The local application of cold is only capable of protecting the heart-muscle from the effects of a high temperature when it is applied assiduously from the commencement of the disease.

5. Under its influence the action of the heart improves, the number of beats diminishes, while their force and amplitude increase.

6. Cold applied to the region of the heart diminishes the gravity of the typhoid condition and favorably influences the respiration.

7. With regard to the effect of cold applied to the region of the heart on the course of the general temperature, the author cannot at present express a decided opinion, as he did not investigate the question; but in the results which he obtained indications may be found of the possibility of its causing some diminution of the temperature.

WHY DO NOT ALL MYOPES SQUINT OUTWARD?—Dr. F. Stilling answers this question as follows: 1. Some myopes squint inward because their position of rest is convergence, and there may be insufficiency of the external recti besides. 2. The position of rest of many myopes is convergence. If this be only slight, only relative divergent squint can possibly develop. The same holds good for parallelism as position of rest. 3. Even if all circumstances are favorable for outward squint, it will not develop if the individual cannot learn to relax one internal rectus muscle in order to give the eyeball a chance to assume its position of rest. 4. The majority of myopes do not squint because they have acquired the faculty of shifting the range of relative accommodation in the interest of binocular fixation so that the synergistic efforts of accommodation are reduced to a minimum. —*American Lancet.*

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A QUESTION OF COMPENSATION FOR EXPERT TESTIMONY.

WE have to thank several correspondents for calling our attention to what we cannot but regard as a legal outrage, which has been perpetrated against a prominent physician living in Southwestern Ohio. The facts of the case are as follows: Dr. F. H. Darby, President of the Miami Valley Medical Association, living in Morrow, a town not far from Cincinnati, was summoned to Lebanon as a witness in a wife-murder trial. Being put upon the stand, he made the statement that he would testify to all matters of facts within his knowledge, but would refuse to give expert testimony unless he were assured a certain fee. The judge informed him that the fee could not be allowed, and that, according to a recent decision of the Supreme Court of one of the States, physicians could be compelled to give expert testimony without extra compensation. The examination then went on, the witness answering readily all questions put to him concerning facts within his own knowledge, until the prosecuting attorney asked him to "state whether, in wounds like this, there would be immediate gaping, or would the lips of the wound for a time remain in contact or nearly so?" This question Dr. Darby refused to answer unless he were guaranteed a fee of $25 for expert testimony; and, as he persisted in his refusal, he was committed to jail to be confined until he was ready to purge himself of the contempt of court. The witness spent two nights in jail, still refusing to recede from the position he had taken; and whether he has even yet been liberated we are unable to say. He is determined, however, not to yield, and will carry the case up to the Supreme Court, if necessary, in order to see whether justice can be guilty of such injustice.

We do not know what State it is in which the Supreme Court has handed down the decision that professional men may be compelled to give expert testimony, but we do know that other decisions have been made which affirm directly the opposite. Tidy says, in his "Legal Medicine," that no witness can be compelled to give his *opinions* in the witness-box, and no one is bound to accept a subpœna merely to state opinions. The witness that can speak to any actual fact connected with a case must attend the trial if he be required to do so, but the expert, however wide his experience, cannot be forced to give the court the value of his general or special knowledge. This, of course, refers only to English law, and the law in this country is not necessarily the same. Mr. Henry A. Riley, a well-known writer on subjects pertaining to legal medicine, is the author of an article on the Law of Expert Evidence in the "Reference Handbook of the Medical Sciences." In this article he says that, while an ordinary witness may be compelled to testify to facts within his knowledge which may be important to the just decision of the case, experts are in a very different position. "It has been fully settled," he says, "that expert witnesses are not obliged to give testimony against their will in cases where they are subpœnaed. They would probably be guilty of contempt of court if they did not obey the subpœna, but they cannot be compelled to testify as to their opinions upon assumed facts if they do not desire to. The payment of a proper fee may be made a condition precedent to testifying. If, however, an expert witness begins to give testimony without raising the point of a failure to compensate him, he cannot stop of his own motion. He is obliged to continue his testimony until his examination is concluded."

We all know that law and equity are not synonymous terms, but it is certainly not justice to compel a man to give for nothing what he has spent so much time, money, and labor to acquire. If a physician has no right of possession in the special knowledge which has cost him so much to gain, then let us be consistent and divide up all property. Physicians, in common with other good citizens, submit willingly and uncomplainingly to the law, and cheerfully make every sacrifice to perform their duty as witnesses to facts which may be of service in furthering the ends of justice. But there is a limit to even such services. It is the common belief that judges and lawyers are necessary to the proper meting out of justice to evil-doers, but they are not on that account compelled to give their services without remuneration, and there is no justice nor reason in forcing physicians to do so. The State has attorneys whom it pays well to prosecute offenders against its laws, and it should pay the expert witness, if it calls upon him, for the knowledge which he has acquired, and which is as much his own property as are the clothes he has on his back.

We are so accustomed to see the long-suffering members of our profession imposed upon in many ways, and robbed of the fruits of their experience and study, that we have grown somewhat callous. But it is time that we began to assert our rights, and we are glad that Dr. Darby has had the courage to resist the imposition which it was attempted to practise upon him. He deserves the thanks of the profession for the stand that he has taken, and we hope he will be successful in establishing firmly the principle that a physician's knowledge is his own property, which cannot be taken from him without adequate compensation.

LATENT MICROBISM.

WE have had occasion to notice recently in these columns several cases of scarlatina in which there was so little apparent chance of contagion as to suggest the possibility of spontaneous origin. It is true that all diseases of this nature must have had an origin at some

time, but so must all forms of animal and vegetable life have had, at some period in the world's history, a beginning. The experiments of Tyndal and others have, however, shown that spontaneous generation cannot or, at least, does not now occur, and the teachings of medical science are equally positive in opposition to the assumption of spontaneity in the origin of infectious disease.

M. Verneuil has recently advanced a theory concerning the latency of disease which, were it satisfactory in other respects, would account for the occurrence of just such cases. He assumes that there may be collections of pathogenic micro-organisms in various parts of the body, as in the skin or serous membranes, the connective tissue, etc., which may remain inactive, giving rise to no symptoms whatever for months and years. Finally some disturbing cause, very slight it may be in itself, starts up these latent microbes to renewed activity; they increase rapidly in number, and wander forth from their resting-place to infect the system and set going the morbid processes of disease.

This theory serves well to harmonize the doctrine of contagion with the cases of seeming spontaneity of origin of diseased processes which are met with from time to time. It supposes, of course, that there has been contagion at some time; but it may have been years before the disease makes its appearance, and so the affection seems to be developed spontaneously. But there are two objections, at least, to M. Verneuil's theory. The first is that it assumes that micro-organisms are certainly the cause, and not possibly the accompaniment, of morbid action. The second is that it is founded on pure speculation, and is as yet unsupported by any facts whatever.

A SURE CURE FOR DIPHTHERIA AGAIN.

We feel that perhaps an apology is due our readers for bringing to their notice another of the many methods of treating diphtheria, which are always said to be so successful in the hands of their advocates, but which, for some reason or another, often fail to yield satisfactory results when employed by others. But the therapeutic nihilists must not be allowed to have the ascendency always; and, indeed, some of the methods recommended in recent years, though not specifics, have proved to be very serviceable, and it is not impossible that others may yet be proposed which may be found to be of even greater value. It is, therefore, worth while to consider any new plan of treatment that may be brought forward, or to note any remarkable series of successes which have followed the employment of old methods.

Dr. A. Brondel writes, in the *Bulletin Général de Thérapeutique* of November 15, 1886, concerning the treatment of diphtheria by benzoate of sodium, and asserts that of two hundred consecutive cases he has not lost a single one. He admits the possibility of a mistaken diagnosis in some instances, but even excluding fifty per cent. on this account he still has one hundred cases without a death. His method is as follows: Every hour the patient takes a tablespoonful of a solution of benzoate of sodium, fifteen grains to the ounce, and at the same time one-sixth of a grain of sulphide of calcium in syrup or granule. In addition to this, the throat is thoroughly sprayed every half-hour with a ten per cent. solution of benzoate of sodium. This is done religiously at the regular intervals, day and night, but no other local treatment is employed; no attempt is made to dislodge the false membrane, and no pencilling nor painting of the fauces is resorted to. Tonics are given and antipyretics are used when occasion calls for them. The nourishment consists of beef-juice, tender rare meat, milk, etc., but bread and all other articles which may cause irritation of the throat are forbidden. The sick-room is kept filled with steam from a vessel containing carbolic acid, turpentine, and oil of eucalyptus in water.

The employment of benzoate of sodium is not a new method in the treatment of diphtheria; for it has been tried, and is recommended highly by Letzerich, Kien, Ferréol, and others. But this, of course, speaks so much the more strongly in favor of the remedy; and as Dr. Brondel's results were better than those obtained by others using the same drug, it is to be presumed that his method of employing it is the best.

THE ETHICS OF ADVERTISING.

A correspondent from Kansas City informs us that he has read in the daily papers an account of another wonderful operation performed by a member of the staff of one of the teaching institutions in this city. Having seen similar reports of operations by the same individual, he very naturally inquires if it is necessary to belong to that particular body of instructors in order to be allowed to advertise. In the West, he says, they are more refined and cultured in their methods than they are here. Physicians there bring themselves before the public in many ways, it is true, but in a manner more pleasing to their wished-for patrons. They pose as founders of societies of microscopy and art, are prominent in religious circles, and are foremost in all public enterprises and philanthropic schemes of every kind and sort.

This is all very true, and our correspondent is right in claiming that the Western methods are more refined and more in keeping with the requirements of the Code. But he fails to recognize the broad distinction between local and national advertising. The man who works what the wicked call the Sunday-school racket has only a limited sphere of usefulness. He may be called on to treat the clergyman of the parish gratuitously, and through him may get a few fees out of the members of the congregation. But the man who reports his marvellous operations, or who announces himself as delivering a course of lectures, in the papers throughout the country has a more lofty ambition. He desires to relieve the sufferings of his fellow-men everywhere, and not merely those residing within the limits of a narrow section. That our Western brethren are beginning to grasp this idea is evidenced by some startling tales in the papers of a dead person brought to life by a Chicago physician. That is more than the professor, with all his operations, has ever done.

But, as we have said before, the fact that an enterprising reporter writes up an account of an operation for his paper does not necessarily imply that it was done with the consent, or at the request of, the operator. It is only when the offence is flagrant, and is repeated time and again, that it is fair to throw the odium upon the surgeon. A little charity in our criticisms of our professional brethren is never out of place.

THE INDICATIONS FOR THE USE OF ALCOHOL IN ACUTE DISEAESES.

It is getting to be a quite well-established canon of medicine that most healthy men are better without alcohol taken in any form or at any time. We are inclined to add that Americans do not bear it so well as Europeans. That it can be dispensed with altogether in medicine, however, is a thing not to be admitted, and medical opinion almost unanimously supports this view. But no doubt alcohol is often used more promiscuously than it should be, especially in hospitals, and the observations and conclusions of Dr. Collie regarding the indications for its use (*The Practitioner*, vol. xxxvii., No. 5) deserve close attention. Dr. Collie admits that alcohol is not required in the mildest cases of fevers, nor in the severe if the patient be taking a sufficiency of food, nor generally in young adults of the well-to-do classes. These are great admissions for Dr. Collie to make; but in opposite circumstances he maintains it is more or less necessary, and we advise our readers to consider his opinions. Briefly, in the chief fevers, to which his authority applies, they are as follows: In *typhus*, alcohol is rarely required for children or adults under thirty; but after this age it is necessary, and often in considerable quantities. It may be dispensed with early in convalescence, as solid food can be taken as soon as the temperature falls. In *scarlet fever*, alcohol is not required, as a rule, at any period of the disease. But in very poor children, in early convalescence, with abscesses or brawny neck, alcohol, in the form of port wine, is indicated. He considers port, say four to eight ounces, good for children of the age of from four to six. For procuring sleep it is better than opium. In enteric fever the chief value of alcohol is during convalescence, where solid food cannot safely be taken for from ten to fourteen days from the return to normal temperatures. Alcohol is contraindicated in cases of hemorrhage unless collapse has resulted. Burgundies and champagne, of well-approved brands, are, he thinks, the best forms.

THE IMMEDIATE CURE OF WHOOPING-COUGH.

Our Scandinavian brethren have been showing considerable activity of late in the line of therapeutics. We reported the results obtained in the treatment of tubercular meningitis by iodoform. Now we find one Dr. Mohn, who claims to have an immediate cure for whooping-cough (*Norsk Magasin for Laegevidenskaben*, November, 1886; *Rev. Internat. des Sc. Méd.*, November, 1886). Dr. Mohn writes that, about six years ago, his three-year-old daughter was attacked with scarlet fever, followed by whooping-cough. At the end of five weeks, when the scarlet fever had run its course, Dr. Mohn fumigated the clothes and apartment with sulphurous acid. The child's attacks of coughing ceased from that day.

Four years later he was called to see a child of three years who was suffering from pertussis to a dangerous degree. Three brothers and sisters were affected also, but not seriously. Dr. Mohn burned his sulphur, and the next day all four patients were cured!

Other cases are cited. An infant of five months, who had had the disease for five weeks; a boy of four years, who had suffered from it for fifteen days, were cured as "by enchantment." Six other cases are reported, all treated with equally brilliant success.

The method is as follows:

In the morning the patient is clothed only in linen and taken out of the bedroom. In the bedroom are left the bedding, linen, clothes, playthings, and everything that cannot be washed. Then sulphur is burned in the proportion of twenty-five grammes to every cubic metre of space in the apartment. After five hours the room is aired. In the evening the patient sleeps in a perfectly pure atmosphere, and in the morning he is cured.

Dr. Mohn reported his method to the Medical Society of Christiania, and it was favorably commented upon. It is, at any rate, a new idea, and perhaps a good one, to disinfect a sick-chamber during the course of the infectious disease.

SMALL FEES AND GREAT DOCTORS.

A young physician, practising in this city, writes: "Is there no help for the pitifully small fee which we doctors, in all but the central parts of this city, get? I started in practice here over a year ago, locating in the neighborhood of a large apartment and tenement-house district. I had spent a good many years and a large sum of money on my medical education, having not only passed through a hospital course, but taken special studies abroad. I began practice by charging $2 for visits, but soon found it would not do at all. I was told that Dr. ——, a professor in one of our leading medical schools, only charged $1; so did other old, well-known physicians practising in the neighborhood. It seems to me that long years of experience and study ought to make a physician's advice worth more than it is estimated at by certain active and venerable doctors in this vicinity.

We often are in receipt of complaints of the above kind, and are generally willing to concede that there is some justice in them. It is too often the case that, as physicians grow older they cannot see the wisdom and justice of selling their services at a higher value, thus diminishing, perhaps, the amount of their work, but in reality doing a better kind. We happen to be able to say with positiveness, that the "Professor" alluded to by our correspondent, at an age when he should be resting or consulting, allows himself to be worked to the last point of weariness by the same kind of practice as that with which he began his professional career.

The Emigrants' Hospital.—At a meeting of the Commissioners of Emigration last week, the Ward's Island Committee presented a long report, reviewing the investigation in October into the charges made against the physicians at Ward's Island, regarding the dissection of bodies and appropriation of specimens, and exonerated the physicians. The committee, however, thought the interests and efficiency of the medical department would be increased by the appointment of a pathologist whose duty it should be to supervise all autopsies in the department, no autopsies to be performed by persons not members of the medical staff. Dr. John S. Thatcher was appointed.

News of the Week.

DR. WILLIAM T. CORLETT, Professor of Dermatology in the University of Wooster, Cleveland, O., has resigned his position as one of the Secretaries of the Section on Dermatology and Syphilis.

DR. GEORGE BRONSON FARNAM died at his home, in New Haven, Conn., on December 23d. He was a graduate from the Yale Medical School.

A DOCTOR'S SUICIDE FROM LOSS OF PRACTICE.—Dr. Henry Andrews, a graduate of Long Island College Hospital, and a resident of Brooklyn, shot and killed himself, on December 25th. He was an unmarried man about forty-seven years old. It is stated that despondency from failure to secure practice was a cause of the suicide.

THE AMERICAN RHINOLOGICAL ASSOCIATION would be pleased to have authors send any monographs, papers, or books, treating of any disease pertaining to the nose, throat, or ears, to the librarian, Dr. N. R. Gordon, Springfield, Ill. The acknowledgment will be made by the Association.

THE SUICIDE OF PROFESSOR KOLOMNINE. — The *Semaine Médicale* gives some particulars of the accident which led to the suicide of Professor Kolomnine. The professor had decided to perform an operation for the removal of tubercle from the rectum of a female patient, and inquired of his colleague, M. Louschinsky, what dose of cocaine he might administer. The answer was that the maximum was two grains. Upon consulting special treatises, however, M. Kolomnine found that thirty cases of anæsthesia were recorded in which the quantity given had varied between six and ninety-six grains. In a similar operation to that he proposed to perform, a French surgeon had given forty-eight grains. In consequence of these references it was decided to employ twenty-four grains, which were introduced into the rectum by instalments. About half an hour after the operation the first symptoms of poisoning appeared, and notwithstanding the administration of nitrite of amyl, hypodermatic injections of ether, oxygen and artificial respiration, etc., the patient succumbed.

THE CENTENNIAL OF THE COLLEGE OF PHYSICIANS OF PHILADELPHIA.—The commemorative exercises of the one hundredth anniversary of the College of Physicians were begun, Monday evening last, with an address by the President, Dr. S. Weir Mitchell, in Association Hall, in the presence of many of the prominent physicians of the city. Dr. Mitchell, in opening his address, spoke of the institution as the oldest medical society, not a State organization, in America. He gave an account of those who formed the college in the latter part of 1786, and who met first, January 2, 1887, speaking of the life and character of Benjamin Rush, John Redman, Samuel Powell Griffits, and Caspar Wistar, Jr. He reviewed the services rendered by the college and by the fellows in forwarding both professional and public interests. At the close of the address a reception was given in the college building, which was largely attended. A special meeting was held at noon on Tuesday, for conferring the honors of Associate Fellowship. An address was delivered by Professor Alfred Stellé, after which the President conferred the honor of Associate Fellowships upon nine gentlemen. Professor J. M. DaCosta welcomed the new Associate Fellows on behalf of the college. In the evening there was a banquet in the Union League, Dr. S. Weir Mitchell presiding. Over one hundred guests were present. Toasts were responded to by Dr. C. R. Agnew, Dr. T. G. Thomas, Dr. William Pepper, Dr. John Ashhurst, Professor Theophilus Parvir, and Dr. John S. Billings.

A CABLEGRAM states that Drs. Martin and Veil have been chosen as Vice-Presidents of the Gynecological Section of the coming Medical Congress at Washington.

THE HOSPITAL SUNDAY FUND, up to date of writing, had reached the amount of $24,843.19, with prospects of a total exceeding that of previous years. The "banner" church, we believe, is the Broadway Tabernacle, whose collection amounted to $3,420.08.

NORTHWESTERN MEDICAL AND SURGICAL SOCIETY.—At the annual meeting of the Northwestern Medical and Surgical Society the following officers were elected: President, Dr. A. R. Robinson; Vice-President, Dr. R. C. M. Page; Secretary and Treasurer, Dr. E. S. Peck.

A DANGEROUS DOSE.—Our attention is called to a typographical error in the article on "Arsenic in Skin Diseases," page 14, in which the dose of Fowler's solution is named as one to twenty drachms thrice daily. It should of course be minims.

THE WEALTH OF FAMILIES.—The physician is paid well, or otherwise, in accordance with the supply of money in the families among which he practises. There are about eleven million heads of families in this country. Estimating their incomes on the same basis as that of English tax returns, there are only about one hundred thousand families having an annual income reaching $2,000, and only about thirty-five thousand having an income equalling or exceeding $5,000. Out of fifty-five millions of population, forty-five millions earn $15 a week or less.

GUY'S HOSPITAL IN NEED.—Perhaps the worst sign of the agricultural depression in England yet recorded, is that Guy's Hospital is asking the public for subscriptions. "Guy's" has hitherto been a very proud hospital, and has kept house magnificently, in the interest of the suffering poor, on an income of over £41,000 a year, derived from estates in land. But the annual yield of these estates has been diminishing steadily since 1879, until, at the present time of asking, it has come so low as £26,000, with every prospect of further decrease. The total of 650 beds of the old prosperous times has been reduced to 500, and then to 400, and it is believed that the worst has yet to come. At one time, when money meant money, and land was land, Guy's lived in great charitable state on its fortune of £220,000 from Mr. Alderman Guy, and its £180,000 added by Mr. William Hunt, a century later, to make the round £400,000, and never asked the public for a penny.

LIGHT ON THE PINEAL GLAND.—Some recent observations of Mr. Baldwin Spencer seem to show that the pineal gland is homological with the vertex eye of lacertilians.

THE MEDICAL ASPECT OF THE COLIN CAMPBELL CASE.—Sheared of its disgusting and prurient details, the Colin Campbell case brings up some very interesting pathological and medico-legal points, particularly with reference to the relation of old chronic gonorrhœa to endometritis and salpingitis. The *Medical Press and Circular* gives the following account of the matter: "Before marriage the husband had been suffering from perineal abscess, the sequel of gonorrhœa contracted some few years previously, for which abscess he had undergone one or two surgical operations—namely, perineal section into the urethra. Marriage took place before the parts were restored to health, but it was previously agreed that separate beds should be occupied for two months or so, in order to permit of recovery. The contention of the wife was that, although he had been operated upon and was not as yet recovered at the time of marriage, yet she had no idea he was suffering from any disorder of the genitals, but had thought it was something of the nature of piles. Communications had been made to her by medical men, but she asserted that this was thus understood by her. However, after some time, permission was given to commence intercourse; but as the husband was again laid up, it had to be discontinued, and further operations became necessary. Intercourse was occasionally resumed, but ultimately the wife's health was affected, and it was found she was suffering from irritation of the vagina and vulva, with uterine leucorrhœa. Local applications were made to the vagina and cervix uteri, but without much benefit. Dr. Braxton Hicks was called in after an attack of very severe pain on one side of the pelvis, who found there a cellulitic effusion; after a few weeks this subsided, but still the uterine catarrh remained, with much irritation of the vagina. As the canal had been well medicated without benefit, the os was dilated. It was evident that the uterine cavity was larger than normal. A silver tube was passed, through which the interior of the uterus was painted over by a brush charged with iodized phenol. This cured the complaint. However, upon overtures being made by the husband for renewal of cohabitation, she begged him to refrain in future, he being still uncured, and to occupy a separate bed. He said if this was to be the case he would leave her; but she rejoined that, if so, she must make clear the reason. Hence this action for separation. And the question asked the Court was whether, under these circumstances, it was obligatory on a wife to permit cohabitation; and, if not, then an order in her favor was requested. Evidence having been taken on the above-mentioned facts, the question put by the Court to many witnesses was, whether the endometritis and other symptoms from which the wife suffered were likely to result from coitus where purulent secretion found its way into the urethra. It was then stated by several medical men that, although there were many causes which produce like symptoms, it was a result quite to be expected under the circumstances. The result of the evidence on his part was to confirm the cause and circumstances of his illness and severe operations, as above described, and the jury (special), after a brief consultation, found that the husband had been 'guilty of cruelty,' which was the legal form of the plaint, and the Court decreed a judicial separation. An appeal was granted. The husband argued the case in person, but the upper Court confirmed the decree of the Court below. No similar case had been in the Divorce Court before, and in any way the decision in its principle was important. It would be difficult to say when the specific contagium of gonorrhœa ceased to infect specifically. In this case a purulent secretion would find its way from the fistula along with the semen, and this would most likely produce irritation of the membrane lining the genital track, with not impossibly salpingitis, cellulitis, etc."

APPOINTMENTS AT OUR CITY LUNATIC ASYLUMS.—The Commissioners of Charities and Correction have appointed Dr. E. C. Dent Medical Superintendent of the Lunatic Asylum on Blackwell's Island, and Dr. A. Trautman Medical Superintendent of the New York City Insane Asylum on Ward's Island. Dr. Dent has filled the place ever since the resignation of Dr. Franklin, to whom he was first assistant, and Dr. Trautman was first assistant to Dr. Macdonald, who has been made General Superintendent.

THE SUIT AGAINST DR. ALFRED S. PURDY AND SON, brought by a patient who had been removed by the Board of Health to the Small-pox Hospital, was, as is generally known, appealed. The Superior Court, General Term, has decided that the complaint should have been dismissed, as there was a reasonable doubt as to the character of her disease in the beginning, and as it was the duty of the physicians to report the case to the health officers, who then assumed the responsibility of taking her to the hospital. We are glad to chronicle this just conclusion of a matter which has been to the last degree vexatious and oppressive to the physicians concerned. The formal decision of the Court, that the responsibility for sending patients to the hospitals for infectious diseases rests with the Board of Health, will be a source of satisfaction to the profession and of safety to the public.

A CHEMICO-PHYSIOLOGICAL INQUIRY.—Two correspondents from Aurora, Neb., write: "Can we have a physiological action of any drug without a chemical action?" Certainly not. All vital phenomena are the expressions of molecular changes in the cells, and such molecular change is "chemical action."

THE LATE DR. FRANCIS M. PURROY.—*Whereas*, It has pleased Almighty God to remove by death one of our number, Francis M. Purroy, M.D.;

Resolved, That the members of the Board of Surgeons of the Police Department of the City of New York hereby express their sincere sorrow for the loss of Dr. Purroy. He was genial in his manner, kind and considerate toward all with whom he came in contact. This Board feels that in his early death it has lost a much respected and most valuable member;

Resolved, That this Board most respectfully tender to the family of Dr. Purroy this expression of their pro found sympathy;

Resolved, That a copy of these resolutions be sent to the family of the deceased, and that they be furnished to the medical journals of this city for publication.

CHARLES PHELPS, M.D., *President.*
JOHN H. NESBITT, M.D., *Secretary.*

Reports of Societies.

NEW YORK ACADEMY OF MEDICINE.

SECTION IN PRACTICE AND PATHOLOGY.

Stated Meeting, December 21, 1886.

ALFRED L. LOOMIS, M.D., LL.D., CHAIRMAN.

DR. T. MUNSON COAN read a paper (see p. 38) on

THE THERAPEUTICS OF MINERAL WATERS.

DR. W. H. THOMSON opened the discussion, and said that this was one of the most important subjects in therapeutics. There was one important part of it to which Dr. Coan had not alluded, and that was the contraindication to the use of mineral waters. On account of the fact that these waters increase the interchange of elements and the waste of the body, they were, *ipso facto*, contraindicated in all diseases attended by loss of weight. He would hesitate decidedly before recommending mineral waters to phthisical patients, or to patients who, suffering from nervous affections, were losing weight. With the single exception of diabetes he would not recommend their internal use in any case in which the patient was losing ground in either nervous or muscular power.

There was one significant fact concerning the saline mineral waters of the world, and it was that their constitution was an almost exact reproduction of the watery part of the human blood. Dr. Thomson then compared the Geyser water of Saratoga with pure blood; also Kissingen and others. Patients, while taking these waters, take an excess of the most natural ingredients, and in about the same proportion in which they are found in the blood, hence the action of the system in dealing with this excess is that of a body overfed with a certain kind of food, and in the stimulation of those functions we are to find their therapeutic results.

With regard to classification of diseases in which they may properly be used, he thought that, almost without exception, they could be grouped under the head of disorders of the abdominal circulation. Gastritis, catarrh of the stomach, hemorrhoids, gout, rheumatism, and skin affections in adults dependent upon these diseases, occur in patients with delayed and deficient circulation through the portal system.

In the treatment of diseases of the bronchial, laryngeal, and nasal passages, on the other hand, the use of pure salt was the most efficacious. This group constituted an exception to what he had said concerning the portal circulation, but the use should be in the way of topical applications of pure salt in solution. Nothing was more efficacious for catarrhal affections of the nasal mucous membrane than common salt.

Dr. Thomson had not seen a case of functional nervous disease that had been benefited by the use of mineral waters, and would not recommend them in this class of diseases, unless they had some alliance with gout or rheumatism. In this respect, therefore, he disagreed with the author of the paper as well as with many European physicians.

DR. JOHN C. PETERS had not had very much faith in the efficacy of mineral waters. The simple Hygeia Water was merely aërated distilled water, and contained no mineral ingredients. Yet those who had not compared it with ordinary drinking-water would be very much surprised at the difference. Many dyspeptic patients, especially those who cannot eat fruits and vegetables, can, by the use of this water, escape diarrhœa and increase their diet.

The quantity of soda in the water of the Ems was about one grain to the ounce, but he thought that almost as much benefit could be obtained by the use of waters to which this quantity of soda had been added. Mention was made in a similar way of several other springs. At some of these watering-places the directions given by physicians as to diet were ridiculous and absurd to the last degree.

The Kansas Hot Springs were almost pure water. At Sharon and Richfield hot bran baths have been extensively used. With reference to the purgative waters he thought that about the same results could be obtained by the addition of the same proportion of saline matter to common water, aërated water especially, as could be obtained by the use of Hunyadi and others. What he objected to most was the sending of patients who were unable to bear the expense away to mineral springs with the expectation that they are to receive a special benefit from this mode of treatment.

DR. H. PINKNEY said, concerning Sharon Springs, that he had not seen a single bran bath there, but that they were using the sulphur waters in the usual variety of ways.

DR. PETERS remarked that the bran bath was given at Sharon ten or fifteen years ago, and that certainly it was still used at Richfield.

DR. COAN said that the Hygeia Water was now being prepared so that it was considerably more than simple aërated water. With reference to the use of mineral waters in wasting affections, he had become convinced that they were useful as tonics. In several cases in which there was great loss of flesh, and in which it was still continuing, the gain had been so rapid while using the waters that the effect was unmistakable. He fully believed that the saline waters are tonics. He did not believe that everything could be cured by this class of agents, but believed that more patients could be benefited by them than had perhaps been generally supposed.

DO ANTIPYRETICS AS AT PRESENT EMPLOYED MODIFY THE DURATION OR THE MORTALITY OF TYPHOID FEVER.

DR. S. BARUCH opened the discussion (see p. 33), and was followed by DR. F. P. KINNICUTT, who said that his experience was very much in accord with that of the author of the paper, and therefore he would call attention to only one point. The percentage of relapses during the present outbreak of typhoid fever had been largely in excess of that reported in previous outbreaks in this country, and the question naturally suggested itself whether or not the very generous use of recently discovered antipyretics might be regarded as exercising any influence in increasing this percentage, and therefore, probably, the percentage of mortality.

This was a difficult question to answer, but the same question, it seemed, has been raised elsewhere, as Liebermeister had showed that the percentage of relapses before the use of the cold-water method was nine per cent., while after its introduction it was a little more than ten per cent. Even this difference might be lessened when it was considered that the cases in which relapses occur are very likely to terminate fatally.

During the last three months there had been in the New York Hospital 27 relapses in 40 cases of typhoid fever; and in St. Luke's Hospital out of 18 cases there had been 6 relapses. This percentage is much larger than that recorded abroad. Yet deductions from statistics Dr. Kinnicutt regarded as wholly valueless in determining the influence of antipyretic treatment on the occurrence of relapses. If they positively increase the percentage of relapses, it would not be unreasonable to infer that they interfered with the natural processes of the disease and the expulsion of the poison from the organism.

In 3 of the 6 cases in St. Luke's Hospital in which relapse occurred no antipyretics had been given during the initial attack.

DR. W. H. THOMPSON added the statistics taken from the records of the Roosevelt Hospital for the months of September, October, and November. During these three months 24 cases were admitted.

Of these, relapses occurred in 6, and none of the patients had taken any antipyretic.

Of the 24 cases 6 had antipyretic treatment and 18 did not; but none of the 6 were put upon the antipyretic treatment until the temperature rose above 104° F.

Of the 18 cases only 1 patient died, and he was admitted in convulsions and with symptoms of meningitis.

Two of those treated with antipyretics died; total, 3 of the 24 cases.

The unfavorable symptoms which followed the use of antifebrin in two cases—prostration with profuse sweating, etc.—led him to forbid its use in other cases.

From his experience in the use of antipyrin and the graduated cold bath, he preferred the latter, removing the patient as soon as his temperature approached 102° F., expecting that it would fall considerably after removal from the water.

Dr. Andrew H. Smith mentioned twelve cases that had been admitted to the Presbyterian Hospital since the first of September. In all these cases, when the temperature rose above 103° F., either antipyrin or antifebrin had been administered; they had not been so well pleased with the latter as with the former. There had occurred neither death nor relapse in these cases.

His own feeling was very much like that expressed by Dr. Baruch, that the moderate use of antipyretics in typhoid fever was calculated to tide the patient over a point of danger; but when used recklessly these remedies, competent to do good, may do a great deal of harm.

It had seemed to him that we do not see such cases of typhoid fever as occurred twenty years ago, with black, dry, fissured tongue; sordes upon the teeth; delirium, etc. To what this was due he was not wholly prepared to say.

Dr. Wesley M. Carpenter recalled something of his experience in the treatment of typhoid fever as it occurred in an elevated rural region before the advent of the more modern antipyretic epoch. The treatment was expectant, not quite so thoroughly so as represented by the cartoon referred to by Dr. Baruch, but consisted in the administration of such antifebrile remedies as were in rather common use, as aconite, sal prunella, soda, and ipecac, remedies found in the saddle-bags of the country practitioner, together with fresh air, a reasonable quantity of fluid nourishment, and sponging with cold or cool water, derived from springs or wells, sometimes acidulated and sometimes mildly alkaline. Frequently the patients were visited for days with the administration of only a very small quantity of medicine, never waking them to take it if they were sleeping quietly. Then came stimulants as they were required, and complications were met according to indications. Under such care the rate of mortality was not over ten per cent., and the recoveries included a few cases of hemorrhage from the bowels—all in which the complication occurred. Relapses were almost unknown.

As suggested by Dr. Kinnicutt, it was difficult to obtain the data upon which to base an intelligent answer to the question before the Section, yet he had an impression that the judicious use of antipyretics would be conservative and beneficial, although from his study and hospital observations he did not feel certain that it could be said positively what was meant by the expression "as they are at present used." He had seen patients to whom quinine in thirty-grain doses every hour for three hours had been given, and the temperature fell two or three degrees, but the same amount of decline occurred at the same time in the day without the quinine, so it became a very serious question whether, in those cases, notwithstanding they were brought forward as illustrations of the antipyretic action of the drug, the rather reckless use of antipyretics, mentioned by Dr. Smith, might not have jeopardized the patient's life, although recovery took place.

With regard to heart-failure and degeneration of the muscular fibres of the heart, he had had opportunity, in connection with the pathological department of Bellevue Hospital, to examine microscopically the cardiac muscle in a sufficient number of cases to make it quite evident that it did not occur, at least in the cases that terminated fatally in that hospital, with the frequency one might be led to expect from reading the writings of German observers.

Dr. John C. Peters thought that the internal use of acids had been too much neglected in the treatment of typhoid fever. He believed in the bacterial origin of the disease, and as all the discharges were alkaline they furnished the most favorable fluid for their growth. The use of acids, therefore, was curative. They prevented not only diarrhœa, but hemorrhage, and they could be given by both the mouth and the rectum, varying from muriatic to nitric and sulphuric, as the case might require.

The Chairman said he had brought this question before the Section because it had seemed to him that the time had come for the profession in this city to stop and think as to what they were doing, as it had become the custom, or certainly was a practice too frequently indulged in, to attempt, at all hazards, to reduce a temperature of 102° or 103°—surely 104° F.—by the use of antipyretics; and if one does not accomplish the end, to resort to another.

He had had the feeling for the last two years that we were doing harm by our heroic measures for the reduction of temperature in the treatment of disease. He did not believe that it was possible for any measure which had the power to reduce the bodily temperature rapidly from 106° F. to 100° F. to be used to this extent without danger. He was not certain, for he had been in the line of observation similar to that mentioned by Dr. Carpenter, that failure of the heart is due to parenchymatous degeneration, of which we had at times heard so much, and it had seemed to him to be due to failure in nervous supply as much as to the muscular changes.

One, in speaking to a question of this kind, should speak very carefully, for the reason that we had sprung from the expectant to the heroic plan of treatment; and from the line almost like that to which Dr. Carpenter had referred, we had gone to another extreme perhaps, without questioning whether or not we are doing harm.

While statistics are very uncertain, we gain from cases impressions which go with us in practice. At Bellevue Hospital, from September 1st to October 10th, there were treated in his wards seven cases of typhoid fever, by the use of internal antipyretics as well as external. Of these four of the patients died. From October 10th to December 1st, eleven cases had been treated by the use only of the cold coil to the abdomen when the temperature reached 104° F., and there were two deaths.

In the cases reported by Dr. Thomson antipyretics were used only in the severe cases; and it would not be fair to say that the patients, in the fatal cases, were killed by them, for probably they would have died without regard to treatment. To answer the question, an equal number of average cases must be treated with and without antipyretics. At one time he became convinced that the alcohol treatment was bad in typhus fever, and he became so convinced because he did not give alcohol in bad cases.

A typhoid-fever patient may have a temperature as high as 106° F., and if it does not last but a few hours it is not specially harmful; it is the long-continued high temperature that does harm. When the temperature is 103° F., and lower, most of the day, only a part of the day up to 105° or 106° F., it did not seem to him that such extraordinary efforts as had been sometimes made should be put forth to reduce it. He did not wish to commit himself on the question under discussion, nor did he regard it as wise for any man to do so in the present state of our knowledge. At the same time, he believed that it was well to discuss the subject and endeavor to ascertain whether or not the antipyretic

treatment of typhoid fever had not been carried on a little too strongly.

Dr. A. H. Smith thought if it could be proved that the internal use of antipyretics in any way checked the production of any morbid material to the presence of which high temperature is due, then, by the administration of such drugs, we were striking directly at the root of the evil.

Dr. Kinnicutt remarked that it was somewhat suggestive that all our most powerful antipyretics were taken for the class of antiseptics.

Dr. Thomson said that, on the other hand, experience at Roosevelt Hospital had shown that the temperature in all the fatal cases might not reach 104° F. This was the experience in 1884, when there were nine fatal cases in the months of August and September, and it showed that mortality did not depend exclusively on temperature.

With regard to the internal administration of antipyretics, his objection was that all of them, thus far, had been derived from the phenic-acid series, every one of which was a cardiac depressant. Quinine belongs to the same group.

Dr. Baruch said that in opening the discussion he had offered his personal views, derived from a general impression, regarding the influence of antipyretics on the mortality of typhoid fever. He was, however, glad that he could cite Gutmann's views in support of his own. Recently Ebstein had reported 337 cases treated without antipyretics, and had found that the duration of treatment was 49.4 days, while the average of 846 cases treated in the Berlin City Hospital, Moabit, with antipyretics was 39.4 days, making a difference of ten days in favor of the antipyretic method so far as duration of the disease was concerned. These were the only statistics that had come under his observation. Gutmann refers to the difficulty of obtaining accurate information regarding the effect of antipyretic treatment on the mortality of typhoid fever on account of the variations in the type of the disease; but he is satisfied that the mortality, which before the introduction of antipyretics was averaged by Griesinger as about twenty per cent., had been greatly reduced. The mortality of the 846 cases in the City Hospital, Moabit, averaged in nine years about thirteen per cent. Liebermeister, in his latest work in "Ziemssen's Cyclopædia," just published, says that the mortality has been reduced fifty per cent. since the advent of the antipyretic method.

After nominating Dr. E. Darwin Hudson, Jr., for chairman, and Dr. R. C. M. Page for secretary, the Section adjourned.

SECTION IN OBSTETRICS.

Stated Meeting, December 23, 1886.

Alexander S. Hunter, M.D., Chairman.

Dr. E. L. Partridge read a paper on

THE USE OF ANÆSTHETICS IN LABOR,

based chiefly upon personal experience. Shall an anæsthetic be used in labor? If so, under what circumstances, and what agent should be employed? He believed that one should almost invariably be used where an operation was to be performed, and it might be used with propriety in a great many natural labors. He would not use it in the first stage, except in so-called forced labor, or labor hurried by artificial means, as Barnes' dilators, etc. He would avoid the use of an anæsthetic in the early part of the second stage, because it does, to some degree, modify uterine action. He would wait for the suggestion of the patient before using an anæsthetic to relieve the pain. If he had no particular reason for using it, he would never urge its use. It is not necessary to produce full anæsthesia in order to lessen the woman's sufferings, and it is only as the child is about to be born that he carries the anæsthesia to the extent of rendering the mother unconscious. If the woman be phlegmatic, or is one who has herself under control, he would not employ an anæsthetic in normal labor. During obstetric operations an anæsthetic should always be employed. Except in placenta prævia and prolapse of the funis, he would use an anæsthetic in version.

After speaking of some of the objections that had been urged against the use of anæsthetics in labor, as its immorality, the liability of performing operations in a bungling manner, etc., the speaker said he could conceive that the liability to the occurrence of post-partum hemorrhage would be a little increased, while the liability to the occurrence of puerperal fever would not be increased, unless violence be used during the operation. Subinvolution and chronic uterine disease might possibly be a little more likely to occur after the use of an anæsthetic.

With regard to the kind of anæsthetic to be used, theoretically, he was unable to see how *cocaine* could do any good, and he had failed to obtain any benefit from its use practically. He would never use *chloroform* in general surgery, and would have but little sympathy for the surgeon who should lose a patient from this anæsthetic. In obstetrics, however, he uses chloroform usually; at the same time remembering that its use is attended with a certain degree of danger. Women have died from the effects of chloroform during labor, but in almost all such cases it has been administered carelessly.

He then gave the differences in the conditions of the surgical patient and a woman in labor, and then spoke of the advantages of chloroform over ether.

In the administration of chloroform he never uses a cone, but simply a folded handkerchief upon which has been put a few drops of the anæsthetic, and it is then held from an inch to an inch and a half from the nose. A crumpled handkerchief in the bottom of a whiskey glass or small tumbler makes a very convenient apparatus.

He would not feel that it was safe to give chloroform to a woman who was already considerably under the influence of chloral. An objection to chloral in the first stage of labor was that the accoucheur must wait until its influence had passed off, and thus it might interfere with the use of chloroform in the second stage.

He believed it to be proper to combine nitrite of amyl with chloroform (the former being an antidote to poisoning by the latter), in the proportion of ten drops to the ounce.

He would never administer any anæsthetic without the consent of some other person than the woman who was in labor.

Dr. Malcolm McLean was ready to indorse Dr. Partridge's views almost entirely. He does not employ any anæsthetic in obstetric practice except chloroform. He uses it in normal labor, when the head begins to distend the soft parts, and had found that it not only allayed pain, but stopped the violent expulsive efforts which might produce lacerations.

Dr. Paul F. Mundé uses chloroform. He does not think it necessary in normal labor to put the woman into the condition of entire unconsciousness, except, perhaps, for two or three minutes when the head presses the hardest, and is passing over the perineum. He does not believe in the use of chloral. One very important point was, never to raise the woman up until she had fully recovered from the influence of the chloroform.

Dr. H. T. Hanks uses chloroform. He avoids any anæsthetic in the first stage of labor. He does not give chloroform simply because the woman desires it. He has used paraldehyde with good effect. He would use chloroform where all other means had failed to produce dilatation; frequently, for purposes of diagnosis, especially in primiparæ with slowly progressing labor and unduly sensitive soft parts; also when the head is passing the perineum; and where the forceps must be used, or a surgical operation or version is to be performed. He uses ether in preference to chloroform when he expects

to keep the woman under the influence of the anæsthetic more than one hour, and also in very anæmic patients.

Dr. W. R. Gillette uses chloroform. He regards the management of the first stage as more important than that of the second. He uses chloroform in all cases of delayed first stage, for its effect in overcoming muscular obstruction before the second stage begins. He gives chloroform, therefore, in the first stage, and assists it by manual dilatation, and by so doing he was confident that he had shortened the labor and also diminished the number of forceps cases. Nor was he afraid to administer it to the surgical degree. In its use, however, the obstetrician must be guided by the peculiarities of each individual case. In the latter part of the second stage he always gives it to the production of the surgical degree of anæsthesia. His method is to use a crumpled handkerchief in the bottom of a whiskey-glass which does not fit over the patient's face tightly, and which can be easily turned bottom side up upon the pillow or a plate, and thus prevent the escape of chloroform that sometimes produces such disagreeable sensations upon the attendants. He is guided solely by the respiration in its administration. He had never seen any danger from post-partum hemorrhage on account of the use of chloroform. Nor did he think that it made very much difference whether chloroform or ether was used in obstetric practice. Our Boston friends use ether. He would use an anæsthetic in all operative cases and would leave the case, under those circumstances, if neither the patient nor the friends would submit to its administration.

Dr. S. T. Hubbard had not been in the habit of giving chloroform as often as some had in obstetric practice. This question came up for discussion in the Academy about thirty years ago, when it was learned that several had never given it, while others had given it to the surgical degree, and some gave it in every case of labor. Among the old doctors the practice, before the days of chloroform, was to bleed and give an anodyne in delayed labor, and it was very good practice. Nowadays, if his patients want chloroform he gives it to them in the second stage of labor, while the head is pressing upon the perineum; if they do not say anything about it, he does not; and some women refuse to take it, saying that they wish to know it when they have a baby. It is important, however, in many cases, to give it, and he thought that the indications had been fairly pointed out in Dr. Partridge's paper. He thought there was some danger of post-partum hemorrhage due to the anæsthetic, and he thought, also, that the woman, as a rule, did not recover so well after the use of an anæsthetic as when labor was completed without it. Early in labor he preferred to give his patient an anodyne; possibly bleed her. At all events, the success in obstetric practice was about as good among the old doctors who practised that method as it had been at any time.

Dr. H. J. Garrigues makes use of chloral, with but few exceptions, in every case of labor. When the os does not dilate well, and there is considerable pain, he gives it at intervals of half an hour until the patient sleeps. Sometimes he uses, under the same circumstances, morphia or opium. He never uses chloroform in the first stage of labor, and far less nowadays in the second stage than formerly, and he would be glad if he could do without it; many women did not ask for it and he did not look for indications in order to propose it. It protracted labor and was of considerable danger with reference to post-partum hemorrhage.

As soon as he has to perform a considerable operation, as the use of the forceps, etc., he uses ether, unless there are contra-indications.

There are two very important

CONTRA-INDICATIONS TO THE USE OF ETHER

—namely—(1) The slightest quantity of albumen in the urine, and (2) the presence of any affection of the lungs.

Dr. R. A. Murray uses chloroform, and believed that it was of the very greatest service in the first stage of labor. If the first stage was properly managed, the second stage would go along all right. There were many conditions in which only a slight degree of anæsthesia was required to relax and improve the condition of the soft parts. In the cases in which there was a straight sacrum and an undilated os, and the pressure upon the nerves was great and attended with cramps in the legs, the administration of chloroform was beneficial.

He had not seen any bad effect produced by chloroform with regard to post-partum hemorrhage, but thought that a great many children were lost when it was carried to the surgical degree. When heart disease was present, ether was preferable to chloroform, because it stimulates the heart. Chloroform should absolutely be withheld in cases of placenta prævia, but ether can be used with advantage.

Dr. H. C. Coe rejected cocaine entirely in obstetric practice. With reference to heart disease as a complication of labor, it was more frequent than might be supposed, as he had found mentioned five hundred cases by French writers, and in a great many of these death occurred. Charpentier leaves the question undecided whether or not anæsthetics should be given under such circumstances. Dr. Coe would hesitate very much before using anæsthetics in cases where the complication was present. He did not think that the respiration could with safety be the only guide concerning danger while the anæsthetic was being used, but believed that the pulse as well should be closely watched. He had used the A.C.E. mixture in a large number of cases in Vienna without any deleterious results.

Dr. John C. Peters had used ether mostly, and began its use back in the "roaring forties." When he uses chloroform he does not put the patient fully under its influence, except for the use of the forceps or an operation of equal severity.

Dr. Partridge thought that it was important not to lift the patient up after an anæsthetic, as referred to by Dr. Mundé. He agreed that the first stage of labor should be properly managed, as it might be too prolonged, etc., but thought it did not necessarily follow that chloroform was the agent to be employed. It was a matter of individual experience whether chloroform or some other agent should be used. He preferred an anodyne, as morphine or chloral, for the reason that he did not like to commence chloroform early, as when begun early it was impossible to discontinue it.

After the nomination of Dr. E. L. Partridge for chairman and Dr. L. Emmett Holt for secretary the Section adjourned.

A New Hospital in Detroit.—The *Medical Age* indulges in a little smile at the expense of some physicians of Detroit who exerted themselves to persuade the public that there was need of a new hospital. Their efforts succeeded beyond their expectations, for the land for a site has been donated and two gentlemen have contributed $100,000 each toward the erection of the structure. Thus far the philanthropic physicians were doubtless well satisfied with the results of their efforts in behalf of the sick poor, and were glad to think that they had been instrumental in the foundation of a great, though not much needed, charity. The only thing to mar their joy, however, is the fact that the new hospital is to be placed exclusively in charge of the homœopathic practitioners of that city.

Nitrite of Amyl as an Antidote to Opium.—A case is reported in *L'Union Médicale* of a person who took two ounces of laudanum, and showed every symptom of opium poisoning—coma, small pulse, feeble and infrequent respiration (six to the minute), coldness, and cyanosis. Belladonna proved useless, while inhalations of nitrite of amyl were followed by immediate improvement, and the patient ultimately recovered.

Correspondence.

WILL THE PRESENT LEGISLATURE CODIFY THE LAWS REGULATING MEDICAL PRACTICE IN THE STATE OF NEW YORK.

To the Editor of The Medical Record.

Sir: It is worth while at this moment to call the attention of medical men in this State to what improvements in the laws regulating the practice of their profession they may obtain, by concerted action, from the Legislature about to convene.

Many physicians think that the defeat of every bill introduced of late years to create a State board of medical examiners signifies an unwillingness of legislators to improve the sadly confused laws now in force. On the other hand, not a few legislators have come to believe that it is not possible for doctors to agree on any point; and when asked to introduce a medical bill they begin with one accord to make excuses, on the ground that their time would be consumed in fruitless discussions.

A clear understanding of the facts in the premises will show that there is here misunderstanding on both sides, and that a law can be enacted which will purge the statute-book of its present confusion, greatly improve the state of medical legislation, and meet with the approbation of all reputable men and practitioners of medicine, except those who honestly believe that all health-laws and laws regulating trades and professions are wrong in principle.

Permit me, therefore, to point out:

First, why the bills to create a State examining board have failed to become law; while their discussion has made many legislators think it impossible to frame any bill on which practitioners of medicine will agree; and

Second, the points upon which agreement is possible, and legislation, therefore, obtainable; together with the advantages to be hoped from such legislation.

In the first place, then, why have the bills creating a board of medical examiners failed to become law?

In the session of 1885 there were three bills introduced creating a board, or boards, of this kind. One was introduced at the instance of the Medical Society of the State of New York. It provided for a board of nine members, of whom six were to be chosen from that society's nominations. A second bill, favored by the homœopaths, provided for the organization of several distinct boards. A third, commonly known as the Heath Bill, because introduced by Mr. Heath, of the Assembly, provided for a single board, made up of three regular physicians, three homœopaths, and three eclectics. The partisans of any one of these bills opposed the others. The Medical Association opposed them all. The committee-rooms became like "the ringing plains of windy Troy." The clashing interests were irreconcileable. Compromises were proposed and rejected. Legislators were button-holed and snowed under with letters pointing out, not the merits of any one of the bills, but the demerits of two; to them there appeared to be a consensus of opinion that all were bad, and no counterbalancing testimony to the excellence of any one. It is needless to detail the arguments of the various friends and opponents of these measures; suffice it to say that the homœopaths and eclectics contended that the board created by the bill of the Medical Society of the State would be a Moses' rod to eat them up. The society's committee maintained their right to a numerical ratio of representation, and claimed that with several boards the standard of license would be that set by the poorest. The law-makers refused to enact any of the bills.

In 1886 about the same ground was ploughed over. But during that session a bill to repeal the law of 1880 and restore the law of 1844, which our Supreme Court dubbed the triumph of quackery, was easily defeated, showing that the temper of the Legislature was not in favor of licensing ignorance to prey on the community.

So much for the disagreements; *all on the point of organizing the licensing board.*

Second, in all the bills above referred to there were provisions looking to the regulation of unlicensed practice, and constituting a great and important part of each; these provisions were substantially the same, and almost *ipsissimis verbis* in each bill. Toward the close of the session of 1885, when all the bills to create examining boards were dead, I drafted a new bill [1] embodying the points of agreement of all the others. It passed the Assembly with about three dissenting votes. In the Senate it was on its passage when the chairman of the Judiciary Committee, misunderstanding a phrase as to the burden of proof, and not having read the bill, objected to the present consideration when it was called. There were but two or three days of the session left; the objection was fatal, and the bill died for lack of opportunity to be discussed on its merits.

Last year, after the death of the examiners' bills, and of course at the close of the session, a similar bill [2] was again introduced. Dr. Paine, chairman of the Homœopathic State Society's Legislative Committee, after careful examination of its provisions, supported it; the counsel of the Eclectic College and Society in this city appeared before the committee, but did not oppose it. In the Senate it passed. In the Assembly it failed to reach a vote before adjournment.

At the recent meeting of the Homœopathic State Society they instructed their Legislative Committee to oppose all bills to create a single board of examiners, to favor making the regents' examinations compulsory, and to favor a bill substantially the same as Senate Bill 485 of last year, of which their committee say in a printed statement for distribution among their county societies: "Its essential provisions being in the main founded on correct principles, few members of the profession of either school will interpose any objections thereto; on the contrary, will, so far as may be in their power, endeavor to promote its passage."

It is scarcely prophesying to say that this bill, made up of provisions from the bill introduced by the Medical Society of the State, commended by the Homœopathic State Medical Society, tacitly assented to by the eclectics' representative in open committee, and passed by the Assembly of 1885 and by the Senate of 1886, will become a law if proper action is taken in its behalf.[3]

It only remains, now, to examine in what that bill differs from the law of 1880, which, in spite of all that has been said to the contrary, has proved to be the best law of the kind yet passed in this State, and to point out why its enactment is desirable. For this purpose the deadly parallel column may be used, but with no intent to disparage the law of 1880, which itself has been, as already said, a step in advance of what legislation preceded it.

Provisions of Chapter 513, Laws 1880, as Amended by Chapter 411, Laws 1884.	Provisions of Senate Bill 485 (Assembly 903), Session of 1886.
Section 1. A person shall not practise unless twenty-one years of age and authorized so to do, either before the passage of the act, by the laws in force at the time of his authorization, or after its passage, by Chapter 746, Laws 1872, or Chapter 513, Laws 1880.	Sections 1 and 2 repeat the provisions of the Revised Statutes and Laws of 1880 making a diploma after three years' study a prerequisite of license. They effect no substantial change in the purpose of the law, and preserve existing rights.
Section 2 requires registration of all practitioners (and was intended to make false affidavits by unqualified persons a perjury, but	Sections 3, 4, and 5 provide for registration, and prescribe certain formalities to correct the evils of reckless registration by county

[1] Assembly No. 820, introduced by Mr. Van Duzer, April 22, 1885. Senate No. 419, introduced by Mr. Robb, April 24, 1885.

[2] Assembly No. 903, introduced by Dr. Craft, April 7, 1886. Senate No. 485, introduced by Mr. Connelly, April 7, 1886.

[3] I am purposely guarded in my expressions as to the eclectics; for, while I did not understand their only representative before the committee to oppose the bill, to parts of which he expressly assented, it is still true that their State society joined in the clairvoyants' attempt to repeal the law of 1880, less stringent than the proposed measure, and circulated a memorial for that purpose.

fails to do so by reason of its phraseology).

Section 3 makes it a misdemeanor to practise without authority, or for one possessed of authority not to register, or to practise under a diploma "unlawfully obtained" (a vague phrase).

Section 4 permits a person from without the State, with a diploma from an incorporated university, medical college, or medical school, to practise after indorsement of the diploma by an incorporated medical college or medical school of the State and registration; provided (by amendment of 1884) that this section shall not apply to physicians of bordering States, whose practice extends over our border, so long as they do not open offices in this State.

Section 5 makes the degree of M.D. lawfully conferred by an incorporated medical college or university of this State a license after registration.

Section 6 exempts commissioned officers of the United States Army, Navy, and Marine Hospital Service, and persons in practice ten years who were matriculated in medical colleges of the State at the passage of the act and graduated within two years thereafter.

Section 7 repeals all inconsistent acts and parts of acts.

clerks of invalid diplomas or their indorsement by colleges.

Sections 6 and 7 define "practice of medicine," and make it a penal offence for one to practise after conviction of felony, or without authority or registration, or under authority illegally obtained; make the purchase, sale, fabrication, and imitation of diplomas, or obtaining diplomas by misrepresentations of fact or swearing falsely to any affidavit required by the act, or practising under an alias, or falsely personating a practitioner, illegal; and enact the rule as to burden of proof as laid down by the courts.

Section 8 gives to incorporated societies a civil action for a penalty against irregular practitioners, forbids them to bring actions to recover fees, and allows anyone who has paid them fees to recover twice the amount paid and a penalty.

Section 9 exempts from the purview of the act United States medical officers and members of hospital staffs in actual service; also dentists exclusively practising dentistry; and qualified practitioners of other States, whose practice extends over the New York border, but who have not offices in this State; and persons duly qualified in one county, attending occasional isolated cases in another, but not regularly practising therein.

Section 10 specifically repeals all acts in *pars materia*.

Schedules A, B, C, and D prescribe forms of affidavit, indorsement, and certificate of registration.

It will be seen from the foregoing that except for the specification of new offences the two acts cover the same ground; but the greater detail of the proposed bill may be best inferred from the statement that it, with its schedules, covers thirteen pages, whereas the act of 1880 would cover about two. In the case of The People vs. Kahn the court held that under existing statutes a diploma from the president of a college faculty was not invalid in the meaning of the statute, even if the signature on it had been forged or fraudulenly obtained by him. As the law stands, the purchase, sale, and counterfeiting of diplomas either constitute no offence or are illegal only when shown to be part of the false pretences by which money has been fraudulently obtained. Men convicted of criminal malpractice come out of the penitentiary and openly advertise their criminal business in the columns of the daily press. Dead men are personated by the purchasers of their diplomas. False swearing in registration by unlawful practitioners does not constitute perjury. The proposed bill essays to perfect the criminal law in these regards, and by giving a civil action to afford the prosecution an opportunity in certain cases of foreigners with forged papers to issue a commission to foreign countries; a thing they cannot do in a criminal proceeding.

It is safe to say that no reputable man will care to oppose vigorously a bill punishing offences all of a fraudulent character.

In the next place, the bill provides one simple statute in place of several of doubtful validity, and codifies the laws.

Finally, by enacting all that the various parties in interest can agree upon, it leaves a fair field and a clear-cut issue for future legislation as to the standard of medical education. The friends of central boards argue forcibly that the diploma, as a standard, has only the value given it by the poorest "diploma-mill" conferring or indorsing it. The friends of a central board argue in like manner against many boards. Colleges stand up for what they claim are their vested rights. Regular physicians demand to be represented in a single board according to their numerical preponderance over those who designate their practice by special names, or else oppose any legal recognition of the fact that there can be "schools" in medicine. Homœopaths and eclectics claim that a single board means their extinction as distinct bodies of practitioners.

An issue so many-sided as this needs to be made clear and precise, and freed from all merely collateral discussion. The quicker this is done the sooner it will be settled. But meantime it seems a pity to sacrifice the bird in the hand by striving to catch the bird in a particularly thorny bush; especially when it seems so easy to tie the former securely and then to explore the bramble-bush with all the joy of a pachyderm.

I am, Sir, your Obedient Servant,

W. A. PURRINGTON.

63 WALL STREET, December 24, 1886.

THE END OF A CURIOUS MALPRACTICE SUIT.

TO THE EDITOR OF THE MEDICAL RECORD.

SIR: I have just had the pleasure of a verdict in my favor in a malpractice suit for $10,000, and thinking that the case, which was somewhat unusual, might be of general interest I send you a brief history of the case and trial.

In April, 1884, I was called upon to treat Mrs. Thomas Bermingham. I found her suffering from hip disease in the second stage. I placed the patient at rest, with weight-and-pulley extension. The family were very poor, and unable at any time to purchase a portable apparatus. In October, 1884, I made an exploratory incision through the skin and superficial fascia on the anterior surface of the thigh, some four inches below Poupart's ligament, upon a little swelling like the small end of an egg. Not reaching anything I went no deeper. At the same time, while the patient was under ether, I made passive motion of the thigh to see whether the anchylosis was osseous or fibrous; it proved to be fibrous, and the adhesions were somewhat broken up. The patient did well, and within three weeks walked, without my knowledge, about three miles. I withdrew from the case late in October. The patient was not under any treatment till March, 1885, when the attending physician discovered that the thigh was twenty-four inches in circumference, when fourteen or sixteen would have been normal. He secured a portable apparatus, and expected, as he testified, recovery.

I saw her in March, 1886, and found her apparently dying, emaciated, suffering extreme pain; her thigh thirty-four inches in circumference, purple, coursed over with veins, and ready to bleed at touch almost.

She died March 10, 1886, and the femur was found of normal size; the head necrosed and entirely separated from the shaft, and not a drop of pus present. (There never had been an abscess.)

The attending physician, Dr. Beckett, testified that my incision must have been two and a half inches long and two or three inches deep, and that the tumor of the leg was a multiple fatty tumor, due to the incision. I proved by physicians who saw the tumor, and by others who testified to its character from description, that the tumor was a sarcoma, and was the cause of her death. The jury were out five minutes.

R. M. STONE, M.D.

OMAHA, NEB., December 20, 1886.

SALICYLIC ACID IN JAUNDICE.—Bartholow says that when the cause of jaundice has been removed salicylic acid will remove the bile-pigment from the blood more promptly than any other drug.

Army and Navy News.

Official List of Changes in the Stations and Duties of Officers serving in the Medical Department, United States Army, from December 25 to December 31, 1886.

KOERPER, EGAN A., Major and Surgeon. Granted leave of absence for two months, to take effect about January 1, 1887. S. O. 297, A. G. O., December 27, 1886.

PHILLIPS, JOHN L., First Lieutenant and Assistant Surgeon. Granted one month extension of his leave of absence. S. O. 297, A. G. O., December 27, 1886.

Official List of Changes in the Medical Corps of the United States Navy for the week ending January 1, 1887.

ANDERSON, F., Passed Assistant Surgeon, to U. S. S. Thetis.

AUZAL, E. W., Assistant Surgeon. Detached from R. S. Independence, and ordered to Coast Survey Steamer McArthur.

GREEN, E. H., Passed Assistant Surgeon. Detached from Naval Laboratory for temporary duty on R. S. Independence.

GATEWOOD, J. D., Passed Assistant Surgeon, to Naval Academy, January 5, 1887.

Medical Items.

CONTAGIOUS DISEASES—WEEKLY STATEMENT.—Report of cases and deaths from contagious diseases reported to the Sanitary Bureau, Health Department, for the week ending January 1, 1887:

	Cases.	Deaths.
Typhus fever	0	0
Typhoid fever	18	7
Scarlet fever	30	3
Cerebro-spinal meningitis	4	4
Measles	468	63
Diphtheria	104	40
Small-pox	0	0
Yellow fever	0	0

SURGICAL ANTISEPSIS IN THE BULGARIAN WAR.—In one of the last numbers of the *Archives de Médecine Militaire*, M. Audet gives a brief surgical history of the Serbo-Bulgarian War. Of three thousand wounded men carried to Belgrade Maydl reported fifty-one deaths, twenty-two of which were due to tetanus, leaving a direct surgical mortality of less than one per cent. Iodoform dressings were used, and there was not a single case of erysipelas, notwithstanding that the sanitary and moral surroundings of the wounded were very bad. Of two hundred wounded, Schmidt reported three deaths only; there were four cases of traumatic erysipelas, but none of gangrene or of pyæmia. Dressings of iodoform and corrosive sublimate were used. At Sophia the wounded were received in a pronounced septic condition, but the same favorable results were obtained by antisepsis. Notwithstanding the lack of care on the battlefield, of one hundred and thirty-six cases of injuries, many of which were wounds of bones or articulations, reported by Dr. Blum, there was no case of pyæmia or erysipelas. Iodoform gauze was used in these cases. Similar favorable results were reported by other surgeons in the field, and a comparison of these statistics with those of like injuries a few years ago leaves little room to doubt the value of antisepsis and cleanliness in the treatment of wounds.

OUR FOREIGN-BORN CRIMINALS.—Over one-half (fifty-two per cent.) of the criminals of this State are foreign-born; nearly one-third are Irish and one-tenth are German.

A MEDICAL SCHOOL IN FORMOSA.—Dr. Wykeham Myers, of Takau, in the Island of Formosa, has begun a work which promises to be of extended usefulness. It is the establishment of a school for the education of natives in medicine and surgery. The curriculum is a full one, and the standard of efficiency, as shown by the questions set and answered, is evidently high.

NAILERS' CONSUMPTION AND THE TUBERCLE BACILLUS.—Dr. James E. Reeves, of Wheeling, W. Va., has observed in exceptional cases only the bacillus tuberculosis in the sputum of what is called nailers' consumption. The pulmonary diseases so frequently observed in persons engaged in the nail mills are seldom tuberculous. The same may be said of the coal miners.—*Progress.*

A SIGN OF DEATH.—Among the means of determining between actual and apparent death, M. Peyraud regards cauterization of the skin by Vienna paste as one of the most certain. In the living subject the eschar formed will be of a reddish black or brownish color, while in the cadaver it is yellow and transparent. If the eschar is formed slowly and is of a yellow color, the subject is dead, but if it is red, brown, or black it may be assumed that life is not yet extinct.

THE TITLE OF DOCTOR was invented in the twelfth century, at the first establishment of the universities. William Gordenia was the first person upon whom the title of Doctor of Medicine was bestowed. He received it from the college at Asti, in 1329.—*N. Y. Med. Times.*

THE INTERNATIONAL CONGRESS AND THE PREVENTION OF TROUBLE IN THE FUTURE.—In a notice of the organization of the International Congress, in *L'Union Médicale*, M. L. H. Petit says that it cannot be denied that the profession in this country is very imperfectly represented in the list of officers, and expresses a natural regret that such is the case. The great advantage of medical reunions of this nature, he writes, is that they bring together men who are for the greater part known to each other only by their writings. And if the Americans best known abroad are not to be present, the main object of the congress will not have been accomplished. Without doubt the pleasures of the voyage, of the various excursions, and of visits to the large cities in the neighborhood of Washington will suffice to draw many Europeans across the Atlantic, but, he asks, will the picturesque side cause the scientific side to be forgotten? The remedy for such unfortunate family quarrels which the writer suggests is, that the organization of future congresses be intrusted to a permanent committee composed of men of every country. The members of this committee should be elected at the final session of one congress, and should be retired only after the committee on organization of the succeeding congress should have been definitely constituted. In other words, the affairs of the International Congress should be controlled by the members of the congress, and not by a local organization which may or may not represent truly the medical profession of one country. M. Petit suggested this plan at Copenhagen, and signifies his intention of introducing the measure again at Washington in 1887.

A PECULIAR METHOD OF GYNECOLOGICAL EXAMINATION.—Omaha seems to have a gynecologist whose methods are decidedly unique. He has a large, unwashed old dress of his wife's in his office, and all patients are directed to remove every article of clothing and then to don this dress preparatory to ascending the table. While on the table no effort to prevent exposure is made. All his patients are compelled to receive local uterine treatment daily and straight through the menstrual period as well.

PERHAPS HE IS A FRAUD.—A recent cable letter to one of the daily papers says that Dr. Succi, who has been amusing a credulous public by exhibiting himself in a fasting condition, is reported to be an impostor rather than foolish. A buxom young woman, the mother of a fine boy, is in attendance upon the faster, and it is asserted that she divides the secretion of her lacteal glands with great impartiality between the scientist and the infant.

VOUDOOED PILLOW.—A writer in the *New Orleans Picayune* tells how he met a colored woman who attributed her husband's illness to his sleeping on a "voudooed pillow." She felt the pillow and discovered the "voudoo," which felt hard. The pillow was carried to the river, cut open, and the feathers cast into the water over the left shoulder. If they assumed the shapes of animals as they floated away, the sick man would get well. In a subsequent interview this sable lady informed the writer that the feathers floated off as dogs, cats, etc., and her husband was well.—*The Lancet-Clinic.*

A STRANGE MEETING.—Not long ago a gentleman was run over in the street, in London, by a cab, and was carried into one of the hospitals and put to bed. Shortly afterward one of the house-surgeons went to attend to the case and found that it was his own brother.

PLAIN WALL-PAPER FOR THE SICK-ROOM.—In a recent lecture on nursing, Miss Kelman illustrated the need of having the walls of hospitals of a quiet and unobtrusive color, by telling an anecdote of a patient—an old gentleman—who was heard continually muttering, "Fourteen up, thirty-five across." This fact arrested the attention of the doctor and nurses, who examined the room, and ultimately found that the pattern of the paper was divided into squares of fourteen up and thirty-five across. When the old gentleman fell asleep, he was quietly removed to another room, where, the wall-paper being of a neutral tint, he quickly recovered.—*The Hospital.*

THE THIRD SCOURGE OF HUMANITY is what Erlenmeyer calls cocaine, alcohol and morphine being the other two.

GALAZIMA is the name of a new milk-preparation of the nature of kumyss and kephir. It is prepared by mixing four grams of good grain-yeast in a little water, and adding this and ten grams of cane-sugar to a litre of milk, hermetically sealing the bottle, and then shaking the mixture. At the end of twenty-four hours the galazima is ready. It is described as a pleasant and nutritious beverage, containing one per cent. of alcohol, and heavily charged with carbonic acid gas.

TREATMENT OF OBESITY.—Professor Albert Robin, from a long discussion and study of the subject, concludes that, in cases of obesity, if there be a small excretion of urea, fluids should be freely administered; but if there be an excess of urea secretion, fluids are to be avoided.

THE GUILD OF ST. LUKE.—A correspondent writes that this organization is not a Catholic society, as would seem to be implied by the statement of its object. It is an association formed of medical men, clergymen, and artists, members of the Protestant Episcopal Church, who pledge themselves to uphold the doctrines of Christianity and to promote the spread of the faith by prayer and the force of personal example.

AN ENTERPRISING QUACK.—A story is going the round of the papers to the effect that a quack in St. Louis guarantees to cure almost any disease for a good round sum, which must always be paid in advance. Of course he often fails, and then the patient wants his money back. The "doctor" employs a lawyer for just such emergencies, and pays him $5,000 a year salary. The lawyer is so skilful in pacifying angry patients and compromising with implacable ones that the "doctor" is able to make about $8,000 a year above all expenses.

A SPECIALIST ON SPECIALISM.—Those of us entering practice twenty years ago found men plying medicine as a trade, regarding patients as the physician's private property, not to be trespassed upon by strangers, often controlling such patients by appeals to their ignorance, fears, and prejudices, and substituting in their own persons an acquaintance with the weaker side of human nature, useful for financial purposes, for an exact scientific acquaintance with disease, to be used for the benefit of their race. The specialist was the pioneer into this latter realm, and, like all such, was, too frequently, a martyr to his cause. But he represented that majority which consists of one with truth upon his side, and, like all other such majorities in the history of the world, he has finally won his way to victory. The "elaborate division of labor" is "as useful and successful in a learned profession as it is in the mechanic arts," for the whole matter is a relative question of height of standard. General medicine itself is too often only special attention to such diseases as may prove rapidly fatal; and neglect, or often worse than neglect, of all other maladies. It is itself merely an abnormal, ill-defined specialism, substituting multa for multum, and, like the young cuckoo, insisting upon the sole control of its illegally held habitation. Specialism substitutes quality for quantity, which substitution is the distinguishing mark of the civilized man from the savage; nay more, the essential criterion of advancement in civilization itself.—DR. EDWARD WIGGLESWORTH, *Trans. of Amer. Dermatological Association, Presidential Address.*

DISINFECTION OF CABS.—The St. Giles Board of Works, in London, have announced that hackney carriages which have been used for the conveyance of persons suffering from infectious disease will be disinfected by the board free of charge, and that the driver may be supplied with a certificate of such disinfection by applying to the medical officer of health.

FEMALES AND WOMEN.—Dr. Williamson protests, in the *British Medical Journal*, against the common employment of the word female when woman is meant, and calls the editor to task for publishing a paper on "Some Functional Disorders of Females." He regards that subject as one covering altogether too much ground to be discussed in a short paper, and thinks it would have been better if the writer had called his paper one on disorders of women. Seeing the title, he says he read the article, expecting to find it a study in comparative physiology.

THE DEATH-RATE IN ST. PETERSBURG is said to exceed the birth-rate by nearly one hundred a month. The city is growing, nevertheless, by reason of the constant flow toward it of the country population. The excess of deaths over births is owing partly to the presence in the city of large numbers of soldiers whose wives and families have been left at home.

CONTRAINDICATION TO THE USE OF PARALDEHYDE.—Sommer concludes that paraldehyde ought not to be given to patients presenting atheromatous defects, and should not be employed in connection with alcoholic liquids. Eickholdt holds that the presence of vaso-paralytic symptoms precludes the employment of paraldehyde.

AN OLEOMARGARINE BILL IN DENMARK.—The Minister of the Interior in Denmark has found it necessary to lay a bill before the Folkething regulating the trade in artificial butter. If his bill be carried, dealers will be compelled to pack such "butter" in cases marked "margarine." As no mention is made of any provision in the bill compelling the retailer to state to his customers that he is selling butter, it is to be feared that consumers will not benefit to any great degree.

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PERIPHERAL NEURITIS AND THE PAINFUL PARALYSES OF EARLY LIFE.[1]

BY HENRY DWIGHT CHAPIN, M.A., M.D.,

PROFESSOR OF DISEASES OF CHILDREN AT THE WOMAN'S MEDICAL COLLEGE OF THE NEW YORK INFIRMARY, LECTURER AT THE NEW YORK POST-GRADUATE MEDICAL SCHOOL AND HOSPITAL.

THE scarcity of autopsies in comparison to the frequency of paralysis in early life has rendered this affection difficult to study accurately. A careful observation of symptoms, interpreted by our increased knowledge of the anatomy and physiology of the central and peripheral nervous system, is, therefore, very essential in the study of the disease. There have come under my observation certain cases that have puzzled me in endeavoring to fit them in with the usual classification of the text-books. There has been an atrophic form of paralysis, that in inception, development, and result has differed from the spinal paralyses with which I have been familiar. The essential paralysis of Rilliet and Barthez, assuming an absence of structural lesion, and the myogenic theory of Bouchut, have, on the strength of microscopic examinations, given place to the idea of the spinal source of the trouble. When we consider, however, that most autopsies have been made years after the inception of the trouble, when death has taken place from some other cause, and that there have been relatively few autopsies made in proportion to the number and variety of the paralyses, there seems rather a slender basis for the theory of an exclusively spinal paralysis in childhood. In most of the examinations that have been recorded, investigation of the spinal cord only seems to have been made, and not of the peripheric nerves. In the complete table of autopsies collected by Dr. M. P. Jacobi, in "Pepper's System of Medicine," Laborde's case is mentioned, in which an infant of two years, who had been paralyzed over a year, was found to have sclerosis of the antero-lateral columns with normal ganglion-cells and a sciatic neuritis. There is also one case cited where a microscopic examination, made by so competent an histologist as Robin, discovered no lesion of the cord. Such a case as this would certainly show that, although in the majority of cases paralysis may be spinal, it is not always or necessarily so. Indeed the opinion of Leyden, quoted by Dr. Jacobi, that various lesions or morbid processes may underlie the same clinical history, is pertinent in this connection. Three different lesions were found in four autopsies of cases that presented all the clinical history of acute anterior polio-myelitis. Leyden also called attention to the fact that the peripheric nerves have not been studied so thoroughly as the spinal cord. Mr. R. Barwell, in the London *Lancet*, 1872, claimed that infantile paralysis was purely peripheral, involving the ultimate fibrillæ of distribution of the nerves among the muscular elements. According to this author the essential condition consists probably of some subtile derangement in relationship between the ultimate muscular and terminal nerve-fibres, either from an inflammatory or from some chemical or nutrient change. Any degeneration in motor nerve-cells and nerve-fibres that may occur is secondary to the paralysis. While this theory contains a plausible, and possibly a true, explanation of a certain number of cases, it certainly can be ruled out at the present time as a generalization intended to cover all cases. Leyden, in the *Zeitschrift für Klin. Med.*, 1880, advances a more rational explanation, when he considers that in atrophic paralysis there may be a coexistence of neuritis with a spinal-cord lesion, and that instead of such forms of paralysis always originating in the spinal cord, they may have their beginning in any part of the motor apparatus, thence spreading to other parts, or remaining limited to the part first affected. This author does not attempt to deny the common conception of anterior polio-myelitis, but simply insists on the frequent coexistence of neuritis, thus affording a varying point of departure for the morbid process. He claims that where complete recovery takes place, the morbid process has always remained peripheric. Leyden's theory has appeared to the author of this paper to afford a satisfactory explanation of certain cases that have been observed clinically. It is true no autopsies are to be recorded, as such cases have always recovered. In two instances Leyden found the sciatic nerve affected, in one case by an interstitial neuritis, and in another by partial atrophy. Oppenheim has reported a case in which spinal cord lesions and multiple neuritis coexisted in the same individual.[1] In the usual absence of autopsies, particularly in cases that completely recover, from what we now know of the symptomatology and behavior of spinal and peripheral lesions, we are more justified by the clinical evidence in regarding certain cases of paralysis in children, as due, at least primarily, to peripheral neuritis than to polio-myelitis.

James B——, aged five and a half years. Father has had rheumatism, but otherwise healthy. The mother died of consumption. The boy has been healthy. His illness began with pains in both ankles and the dorsum of the feet. He would cry when his shoes and stockings were put on. This was followed by a gradual loss of power in both feet and legs. In two weeks the paralysis was pretty complete. After the trouble in the legs had lasted a week, the left wrist began to drop, and four days later the right wrist was affected in like manner. The paralysis became complete in a few days. I saw the boy after he had been ill a little over three weeks, when he had complete drop-foot and wrist-drop. Both parts were likewise extremely painful to the touch. The pain was much aggravated by attempting to extend the feet or move the hands, which actions caused sharp cries. The pain in the legs was most severe along the course of the anterior tibial nerve, and did not appear to extend much above the knee. He was utterly unable to stand, and the effort caused great pain. The paralysis of the extensor muscles of the hands and fingers was likewise complete, as they hung perfectly helpless, unable to grasp a single object. There was some atrophy of the parts. A slow improvement began, and in a week or so the boy could take hold of objects and make some effort to walk, although the latter caused pain. In five weeks after the time I first saw him he could walk fairly well. Pleased at the improvement, his father took him a long walk upon a certain day, with the idea of strengthening his weak limbs. The next morning he cried with pain when he attempted to put on his stockings. He was likewise seized with vomiting, fever, and a recurrence of the

[1] Read before the New York Neurological Society, January 4, 1887.

[1] Zeitschrift für Klin. Med., vol. xi.

paralysis in the legs, which were painful upon handling. The arms and hands remained the same. Two nights after this he was again taken with vomiting, followed by pains in the arms. The following day, when I saw him, the pains in the arms extended above the elbows, and the drop-wrist was once more complete. Temperature, 99°. He had refused food for two days. I saw him two days later, when he was worse. The child was complaining constantly of pains in the arms and legs, crying out if they were touched. He had vomited all food, but wished to drink constantly. Pulse, 120, and weak; temperature, 98½°. He appeared to doze most of the time, waking up with cries, and presented a pitiable picture of helplessness and misery. There soon began, however, a slow improvement, and in a few weeks he could begin to use his limbs again. I watched the case with interest until leaving town, when the boy was in fair condition. Upon my return I could not find him, so that I cannot report whether he had any further relapses. If so, I think his father would have brought him back to me, as he was very faithful in his attendance. Lead-poisoning was excluded by the absence of lead in the urine and the lack of symptoms. During the treatment he was given ergot, the bromide and iodide of potassium, salicylic acid, and quinine, at various times. The combination of the bromide and iodide of potassium appeared to do more good than the other remedies.

Louisa B——, aged three years. Family history as follows: Father has had nasal catarrh and eczema. He has one cousin that is an idiot, and two that are deaf and dumb. The mother considers herself healthy, but has had one still birth and two miscarriages, one occurring at four months and one at two months. Louisa has never been a healthy child, although there is no distinct account of illness until she was sixteen months old, when she had bronchitis and a sore throat, that was probably diphtheritic, judging from her mother's description. This left her in a delicate condition. When two and a half years old she had an attack of measles, followed by sore eyes. About fifteen days after recovery from the measles she was taken with fever, complained of pains in the legs, and lost power in them. The paresis was very gradual in its onset, not being complete for over two weeks. She would first attempt to walk by steadying herself between chairs, and when the ability to do this was lost, she tried to creep, with the toes turning in. The paralysis of the legs was followed by atrophy. The mother says it pained considerably to touch her anywhere from the hips down. This condition remained for six months, when I saw her in the beginning of August, 1885. Two weeks previously, the child had been taken to Rockaway and given a partial bath, which was followed by pains and paralysis developing rather suddenly in the hands and arms. At the time I examined her there was marked wrist-drop and loss of power in the forearms. The child was badly nourished and fretful. Whenever her arms or legs were touched she would cry with pain. This crying was not aggravated by any distrust of strangers, as it occurred the same when her mother handled the parts. It was impossible to sharply localize this pain on account of the distress produced by the examination and the extreme peevishness of the child. It appeared to be greatest, however, in the hands and feet. There was a loss of faradic reaction in all the muscles of the leg below the knee, and in the extensor muscles of the arm, likewise a reaction of degeneration to the galvanic current. R. Ant. Tib., ACC at 14 cells, CCC at 21 cells; L. Ant. Tib., ACC at 15 cells, CCC at 22 cells; R. Peronei, ACC at 26 cells; Post. Tib., no reaction; R. Extensors of fingers, ACC at 11 cells; CCC at 13 cells; L. Extensors of fingers, ACC at 11 cells; CCC at 13 cells; Flexors of fingers, CCC > ACC. The patella tendon reflex was normal on both sides. The legs were atrophied, likewise the muscles on the back of the arm. The child was not able to stand, crying bitterly when the legs were touched to the floor. She was put on tonics and the iodides, and given applications of electricity. There was a slow improvement, and in several weeks she could use the legs some, and grasp objects with the hands. The general condition also improved. The appearance of the case bore a resemblance to lead palsy, but corroborative symptoms were absent, and an examination of the urine showed no lead. To my surprise, the case went on to a slow but complete recovery. I doubt if treatment had much to do with this result, as she was brought very irregularly to the clinic, and only had electricity a few times. She remained in the same environment during all her illness.

In the following case there appeared to me to be some neuritis present, in addition to a spinal paralysis. J. C——, aged three years, was taken sick suddenly at night with fever, vomiting, and loss of power in both legs and arms. He cried a good deal with pain. He afterward lay quietly when left alone, but if the extremities were touched would utter cries of suffering. There was hyperæsthesia in all parts of the body. Improvement was slow, beginning in the arms. For the first few weeks he was perfectly helpless, being unable to turn in bed without aid. In about six week he sat up in bed, and after this recovery was rapid. Within three months he was quite well. Pain upon touch was the most prominent symptom in addition to the paralysis.

In the above-mentioned cases there was no evidence of spinal meningitis to account for the continuous pain. I could not thoroughly satisfy myself as to the underlying cause of the trouble. The first case had a strongly rheumatic look to me. His father has been subject to this disease, and I think there was an element of it in his case. Salicylic acid did not afford any relief to the paralysis. Dr. Shrady tells me he has lately seen in consultation a girl, four and a half years old, who was attacked five months ago with symptoms regarded by the attending physician as rheumatic. There was severe pain in both lower extremities, but worse in the right. She was in bed for two days with fever, and on attempting to get up the right leg gave way, and she fell to the floor. The pain ceased at the end of ten days, but the paralysis continued, although it is now improving. There has been atrophy and a loss of faradic reaction. There has likewise been a long patch of anæsthesia on the outer part of the right leg.

In the boy's case, while the symptoms showed a multiple neuritis, there may have likewise been some involvement of the spinal cord. Gowers, in discussing "migrating neuritis," states that it may reach the spinal cord and there produce various disturbances, the inflammation either spreading in the tissue outside the dura mater, or extending to the cord, causing subacute or chronic myelitis, with or without meningitis. He thinks the paralyses that occur secondarily to some visceral diseases, as those of the bladder, and commonly regarded as reflex paralysis, are probably produced through the agency of an ascending neuritis.

Malarial poisoning appears able to produce a more or less severe form of multiple neuritis, with resultant paralysis. Gowers reports two cases of paraplegia that were apparently due to malarial neuritis, both being developed in well-known fever districts. Dr. Holt has allowed me to report the following case that came under his observation: A boy, aged thirteen, was first seen November 15th, being taken with chilly sensations, followed by fever, on the 12th. On the 13th he seemed better. On the 14th he got up with severe pains in the left thigh and milder pains in the right thigh. When seen at the dispensary he had a well-marked limp, favoring the right side, and this thigh was extremely hyperæsthetic, particularly along the sciatic nerve. There was likewise tenderness along the left sciatic nerve. Temperature, 99½°. The pain and lameness disappeared in a few days under antimalarial treatment. The case was seen by Dr. Starr, who regarded the trouble as peripheral and of the nature of neuritis, perhaps in a congestive stage.

Probably the trouble would have been of longer duration if the source of irritation had not been recognized, and removed by appropriate treatment. Nothnagel makes the differential distinction between simple neuralgia and neuritis to be the painful points in the former case, and continuous pain in the latter over the course of the nerve.

There are a number of cases of painful paralysis, coming on with malarial fever, that are recorded in the history books of the Hospital for Crippled and Ruptured in this city. With the permission of the hospital I report here two of these cases, as interesting in this connection, although, of course, not venturing an opinion as to the true nature of the trouble. Henry S——, aged five and one-half years. Family history good. They live in a very malarious spot. After suffering for several days with malarial symptoms, one morning he was unable to get up. The limbs were painful; he would cry if they were handled, and could not use them. There was a high fever every night. The child lay on his back, with the lower limbs and feet extended. Complete recovery took place in a month under quinine.

Agnes W——, aged nine, lived at Ravenswood. She had malarial fever, during which she complained of pains in the ankles. After being in bed a week, it was found that her feet were weak and she was unable to stand. About the same time there was paresis of the hands, which were partly dropped. The duration of the paralysis was four and a half months. A gradual recovery is now taking place.

It has seemed to me that cases of paralysis in children, in which pain is a prominent and persistent symptom, where the loss of power has perhaps been gradual and ascending, and where there has been slow but complete recovery, without deformity, after a long interval of time, a careful investigation will generally reveal a peripheral lesion as the cause of the trouble. A possible explanation of pain is that it is due to a marked general congestion of the gray matter of the spinal cord, this congestion taking place in the area of a definite artery. Adamkiewicz has shown in his plates that the anterior spinal artery supplies not only the anterior portion but the whole of the gray matter, principally, with blood, and the presence of pain in certain cases may simply be a question of degree as to the extent of congestion. But the cases that I have reported, and others like them, present no other symptoms showing irritation in the deeper part of the cord. A general congestion or myelitis should cause bladder symptoms, bed-sores, and other disturbances. The continuance and severity of the pain itself do not appear to point to a central cause. Some excellent authorities have considered that unless children with spinal paralysis are speedily cured, perfect recovery will never take place. Leyden appears to consider that if atrophic paralysis eventuates in recovery, the case was multiple neuritis and not polio-myelitis. He considers that regeneration of the ganglionic cells of the cord has not been demonstrated in the same manner as of the peripheric nerves. Gowers states that it is remarkable, in multiple neuritis, how much improvement may take place even after the paralysis has been considerable for a year. The same author, in his recent work, considers there is no doubt that many subacute and chronic cases, which have been described as atrophic spinal paralysis, are peripheral, not central, in their nature, and are cases of multiple neuritis. He considers that the distinction rests on the symmetrical localization of the neuritic palsy, while that of polio-myelitis is characteristically random in distribution; on the persistence and severity of the neuritic pains; on the tenderness of the inflamed nerve-trunks; and on the anæsthesia in the area of their distribution, a symptom never present in polio-myelitis. Paralysis of physiologically related muscles has been regarded as rather pathognomonic of polio-myelitis, but Professor M. Bernhardt states that Eisenlohr has shown that in disease of the peripheral nerve-tracts, functionally related nerve-fibres may be affected, while adjacent fibres remain healthy.[1] The following points may be considered in making a diagnosis:

Peripheral Neuritis.	Polio-myelitis.
Disease usually begins slowly.	Suddenly.
Paralysis progressive. Involves different members, generally in the nature of an ascending palsy.	Paralysis regressive. Involves at the start all the members affected, some parts quickly recovering.
Pain is usually continuous, especially marked upon handling, and involves certain nerves.	Usually no pain. May be general hyperæsthesia at the beginning.
Perfect recovery may take place after the paralysis and atrophy have lasted a long time.	No recovery after the disease has lasted a short time.

This scheme is provisional and not altogether satisfactory, yet it affords points that, taken collectively, will often make a diagnosis possible. It certainly seems desirable to make the effort, when we consider the statement of Gowers that, until recently, all cases of multiple neuritis were looked upon as spinal. I presented before this Society, on a previous occasion, two children, aged five and seven years, who had repeated attacks of paralysis followed by partial recovery. The first seizures were accompanied by pains and soreness of the limbs. The true nature of the trouble was for some time overlooked, but finally lead-poisoning was found to be the cause of the paralysis. I considered the lesion produced by the lead was confined to the spinal cord, but, with later knowledge on the subject, I am inclined to think that the lesion was largely peripheral. The fact that the later attacks were not accompanied by sensory symptoms does not militate strongly against this view. Schultze has reported a case of lead paralysis in which the radial nerves, below the point where the branch to the supinator muscle is given off, were inflamed, the sensory branches of the nerves being slightly, if at all, involved. The spinal cord was normal.[2] Oppenheim has likewise reported a case where microscopical examination revealed inflammation of the peripheral nerves, together with a lesion in the spinal cord.[3] I think that lead may be not seldom at the bottom of obscure paralyses of children, and where recovery takes place after a long interval of time the lesion must be largely peripheral.

It is impossible in the present state of knowledge to accurately define all the causes that can involve the peripheral nerves in children, with resultant pain and paralysis. Cold usually attacks by preference the peripheric system of nerves. The loss of power sometimes following rheumatism is also probably of this nature. Erb states that rheumatic paralysis may arise in all parts of the nerves and in all nerve regions, but, perhaps, attacks the peripheric nerves most frequently. Any morbid blood condition appears able to induce a peripheral paralysis in early life. The group of diseases that Soltmann includes under his hæmatogenous paralysis includes all such conditions.[4] The paralyses following acute infectious diseases, especially diphtheria, are now known to be largely peripheric. Traumatic causes may be present at any period of life.

The object of this paper is intended to be suggestive, not dogmatic. The writer has gladly availed himself of recent studies in peripheral neuritis, as appearing to throw light upon some of the paralyses of children that have caused much perplexity. Assuredly the great differences in the clinical behavior of paralysis in early life, in duration and curability, must admit of different anatomical and pathological explanations.

A New Hospital for Contagious Diseases, having a capacity of four hundred and forty-eight beds, is about to be erected in Milan. In addition to the main building there are to be separate pavilions for small-pox, diphtheria, and typhus fever.

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[1] Zeitschrift für Klin. Med., vol. xi. [2] Archiv für Psych., vol. xvi. [3] Ibid.
[4] Gerhardt's Handbuch der Kinderkrankheiten, vol. v.

BOVINE TUBERCULOSIS: ITS COMMUNICATION BY INGESTION, INHALATION, AND HEREDITARY TRANSMISSION; ALSO ITS DANGERS TO THE PUBLIC HEALTH.[1]

By M. D. BLAINE, M.D.,

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In comparing the opinions of our most able writers and experimenters upon this subject, we find a great want of unanimity regarding the question: Is consumption or tuberculosis inherited or acquired, or is it both inherited and acquired?

The general practitioner, in studying this disease, forms his opinions, in most cases, from circumstantial evidence, derived from daily observations of his patient. Oftentimes he feels that many important facts could be obtained if experiments were permissible upon the human subject. His moral convictions restrain him, however, and in order to study the disease thus experimentally he is compelled to resort to the lower animals. The objection is made by some, that whatever the results obtained by experiments on animals, it does not necessarily follow that like results would be produced in the human being. When we consider the fact that the animal possesses nearly the same organs as mankind, which are similar in their anatomical construction, and are governed by the same physiological laws, and that like pathological conditions arise under similar circumstances, why then, if tubercle be found in a new-born calf, should we doubt the possibility of its production in a human subject under like conditions?

As my remarks are confined to the bovine species, I shall take it for granted that the same results may be obtained in the human family.

According to Fleming, the disease is met with wherever cattle are kept in a state of domesticity. It is seen in Russia, Sweden and Norway, Denmark, Germany, Holland, France, Spain, Portugal, Austria, Hungary, Greece, Italy, Algeria, Australia, New Zealand, the Northern United States, Canada, and Mexico. In the latter place, he states that thirty-four per cent. of the animals killed for food are found affected, consequently causing much loss. In all those countries where the animals are stall-fed we find the disease more prevalent. In France and Germany, for instance, the disease has gained such boundless limits that the governments have found it necessary to establish abattoirs. They have also placed the dairies under the inspection of competent veterinarians, in order to protect the public health, which otherwise would have been endangered; and to-day we find that in nearly every country where the disease exists to any extent, they have established the same protection as France and Germany.

I will here give an abstract from Fleming, in which he states, according to the excellent abstracts prepared by Goring on the sanitary condition of animals in Bavaria, that there were in that country in 1877 and 1878, respectively, 4,976 and 5,052 cattle affected with this disease, or in 1877 1.62 per cent., and in 1878 1.61 per cent. In 1,000 bulls, 5.84 were tuberculous; in 1,000 bullocks, 1.39; in 1,000 cows, 2.50; in 1,000 heifers, 0.35; in 1,000 calves, 0.09.

In 1877, of 4,976 cattle recognized as tuberculous, 64, or 1.31 per cent., were less than a year old; 328, or 10.81 per cent., were from one to three years old; 1,846, or 37.80 per cent., were from three to six years old; and 2,445, or 50.07 per cent., were more than six years old.

In 1878, the 5,052 tuberculous cattle were apportioned as follows: 65, or 1.3 per cent., were less than a year old; 551, or 10.2 per cent., from one to three years; 1,730, or 34.5 per cent., from three to six years; 2,360, or 46.5 per cent., more than six years. For 336 animals the age was not noted.

Goring, in publishing this abstract, remarks that the veterinary surgeons are not always informed as to the existence of the disease, and that the numbers given above must be considerably below the actual amount in any case.

Adam, in investigating the list of animals killed in the abattoir of Augsburg, arrived at the following results: In 1879, of 10,988 cattle slaughtered, 321, or 2.92 per cent., were tuberculous; in 1880, of 11,688 slaughtered, 262, or 2.24 per cent.; in 1881, of 12,500 slaughtered, 247, or 2.00 per cent.

According to Drexler, of 55,882 cattle slaughtered at Munich in 1875, 704, or 1.25 per cent., were affected with tuberculosis in a very evident manner. Trapp reports that among 11,079 cattle killed in the Strasburg abattoir in 1880, 220, or 1.9 per cent., were tuberculous (this number did not include those slightly affected). For the same year Mandel found 174, or 3.4 per cent., among 5,105 cattle slaughtered in the Mulhouse abattoir; and in 1879 Strobl and Magin recorded 1,125, or 2.5 per cent., of 44,699 slaughtered at Munich.

As regards the ages of the animals, the 1,125 were classed as follows: Cattle under one year, 2, or 0.2 per cent.; from one to three years, 81, or 7.1 per cent.; from three to six years, 378, or 33.5 per cent.; over six years, 664, or 59.2 per cent.

The 1,125 tuberculous cattle may also be apportioned in the following order: 218, or 1.13 per cent., of 19,284 bullocks slaughtered; 558, or 5.30 per cent., of 15,789 cows; 40, or 0.68 per cent., of 5,823 bulls; 28, or 0.73 per cent., of 3,803 heifers; 1, or 0.0006 per cent., of 149,971 calves.

From these figures it results that: About two per cent. of the cattle sent to the abattoirs of these different towns are affected with tuberculosis; the proportion of male to female animals so affected is as one to three; the greatest number of animals are over six years of age; after these, the greater number is from three to six years; very young animals are almost exempt from tuberculosis.

Thus I might continue to quote statistics for hours, but in the end they only tend to establish the necessity of having abattoirs in every country where the disease exists in any degree.

In this country we have no abattoirs, neither have we any compiled statistics relative to the frequency of the disease. The only authentic report that I have been able to find is that made by Professor Law, of Cornell University, and this report refers to a locality and not to the general prevalence of the disease. In his report to the Department of Agriculture, of the contagious diseases of our domestic animals, he says that "twenty, thirty, and even fifty per cent. of certain herds, that supply New York City with milk, are affected with this disease. In some country districts can be shown large herds with ninety per cent. subjects of tuberculosis."

During the past two and one-half years I have examined over four thousand head of animals in different sections of this State, and I find that the disease is more prevalent than is generally known. The majority of animals that I have examined were milch-cows, and I found twenty-one per cent. manifesting symptoms of the disease; but perhaps not over four per cent. of them manifested pulmonary lesions. I have visited some herds where at least fifty per cent. could be shown to be tuberculous. The disease seems to be much more prevalent in some localities than in others. For instance, in low, wet, and marshy districts it is very common; also in places where animals are poorly fed and kept in close confinement, and in poorly ventilated stables.

I visited your stock-yards during the month of July last; also examined a number of herds about your city and Brooklyn. The morning I visited the stock-yards at 159th Street, in company with Mr. Romane, one of your meat inspectors, I saw thirteen cows that were offered for sale, three of which were badly diseased, and one of the three was a cow thirteen years old, and mani-

[1] Read before the Section on Hygiene and Public Health, New York Academy of Medicine.

fested pulmonary lesion. I acquainted Mr. Romane of the fact, and when he consulted the manager of the yard in regard to the cattle, he said that they had been sold to parties in Jersey City for milkers. I visited herds that furnished milk for the city of Brooklyn, and I did not fail to find tuberculous animals in every herd that I visited, and in some herds to a great degree. But I was astonished in not finding more disease than I did, as the manner in which the animals were being cared for was not only unhygienic, but cruel, especially in winter, as several herdsmen informed me that their animals were tied in those small barns in the fall, and were not taken out in the open air until spring time.

Occasionally we read in our daily papers of sudden outbreaks of the disease in different parts of our country, where whole herds are destroyed, as was the case at the Willard Asylum, Willard, N. Y.; the asylum sustaining a loss of nearly two hundred head. I believe, if all the reports throughout our country could be gathered together, we would find that the disease has already developed to an alarming degree.

I now wish to call your attention to certain clinical observations that were made by myself of the herds at the Willard Asylum, extending over a period of two and one-half years. During the fall of 1883 tuberculosis broke out in an acute form in the asylum herd, which consisted of about one hundred head of milch-cows and forty head of young stock, most of which were of Holstein blood, and with the exception of a few head, all were in excellent condition and thought to be in perfect health. During the summer months, however, a number of the cows were noticed coughing, which attracted some attention, but nothing of a serious nature was suspected until late in the fall, when those that had been noticed coughing began to emaciate, presenting in general a very bad appearance; the hair seemed dead, having lost its gloss, standing erect, cleaving from the skin. Their eyes were sunken and presented a heavy appearance. The animals did not move about, and usually lingered behind on going to and from pasture, and if hurried, they seemed exhausted from want of breath. My attention was called to them, and on examination I found in several cases an entire absence of respiratory murmur over the greater portion of either lung, and where the respiratory murmur was perceptible I detected moist râles, and in places the râles had assumed a resonant character, which indicated consolidation. A severe diarrhœa had now developed, which was very offensive, and the milk-supply had gradually lessened for several months. Finally, it was thought best to kill one of the feebler ones, and ascertain the true nature of the disease.

Case I. The animal chosen for examination was eight years old, of Holstein blood, and one year previously would have weighed 1,200 pounds. On post-mortem, the animal was found highly tuberculous, and there seemed to be no organ in the body free from the disease. The lungs were voluminous and double their normal weight. They were completely adherent on either side, and the left lung on section seemed to be one mass of tubercular deposit. Small vomica had formed in some places, in other places the deposit was calcified, and in still others, cheesy. The bronchial glands were three to four times their normal size and degenerated. Numerous tubercles the size of hazel-nuts and smaller, were found upon either surface of the diaphragm, and the liver was found at least three times its normal size and contained large masses that would equal in weight several pounds. On cross-section it revealed large cavities filled with a muco-purulent mass. The bowels were covered with tubercles, and in a state of subacute inflammation. All of the abdominal organs were more or less affected, also the milk-bag, which contained several large deposits, some of which were calcified, and others softened and in a semi-purulent state. All of the glands throughout the body were enlarged, and in places degenerated.

Case II. was that of a Holstein six years old, much emaciated, and suffering from a chronic diarrhœa. No respiratory murmur was heard over the right side of chest-wall except at the apex. General enlargement of the superficial lymphatic glands, also of the sub-maxillary and thyroid. Post-mortem examination: Lungs completely adherent on either side, and differing in no respect from those in Case No. I. The lungs, with the heart and deposit intact, were removed and weighed, which weight equalled thirty-nine and one-half pounds. Deducting the weight of the normal lung and heart intact, we find about twenty-four pounds of tubercular deposit. The liver was double its normal size, and on section large quantities of muco-purulent fluid escaped; the mesenteric glands were degenerated, and the bowels were completely studded with tubercles about the size of peas. The milk-bag contained one large deposit between its two lobes which was calcified. The finding of these two animals so badly diseased, there being others that were failing and manifesting similar symptoms, naturally created a great amount of anxiety on the part of the medical superintendent, Dr. Chapin, who requested that I make an examination of the whole herd. On making such examination, twenty-four were found manifesting symptoms of the disease, besides several that were considered questionable. Finding so many diseased, they being the property of the State, it was thought best to seek advice from one of our State veterinarians, as to what means were best to adopt. Professor Law, of Cornell University, was sent for. After making careful examinations of the herd, he reported that twenty-six were diseased, and that he considered several suspicious, as they manifested some symptoms of the disease, although he was unable to detect anything abnormal on auscultation. He advised the killing of all those that were diseased, the isolation of those that were considered doubtful, and a thorough disinfection of the stables. Having in the herd a full-blooded Holstein bull, it was considered quite essential to know if he was affected, although he had not manifested any symptoms of the disease. Upon careful examination nothing abnormal was detected. Professor Law's examinations were made March 22, 1884.

Many of the diseased animals remained in the herd for several weeks, when the herd was again examined by myself. I found that those that only a few weeks previous were considered doubtful, had now developed positive symptoms of the disease, and still others were found that seemed quite suspicious. The bull, at this time, appeared to be failing in flesh, but manifested no positive symptoms.

On May 22d and 23d, twenty-eight of the most advanced cases were killed. On examination all were found affected, but not all to the same degree. The organs principally affected were the serous membranes, the lungs, liver, bowels, and the milk-bag in many cases. A number of them were affected to an equally great degree as the two cases I have already reported. Examination was again made of the herd on June 10th, and others were found manifesting the usual symptoms; the bull was again examined and it was very apparent that he was affected, although he had not manifested any cough, but he was rapidly losing flesh. He was then weighed, and was found to weigh 2,456 pounds. He was again weighed on July 10th, and his weight was then 2,290 pounds; and as at this time it was very evident that he also was affected, it was decided to kill him. On post-mortem we found a large deposit in the central portion of the left lung, and numerous small tubercles upon the left pleura. The bronchial glands were greatly enlarged, and on cross-section were found calcified. There were many tubercles upon the peritoneum and bowels. The liver in this case seemed free from disease. Upon the glans penis were several small tubercles, and in one place it appeared as though several had coalesced and had broken down, leaving a cicatrix. Had this been ulcerated, one might have thought it a soft chancre.

Leaving the herd at present, I wish to call your atten-

tion to the calves that were born during the winter and spring of 1883–84. Writers tell us that it is not an unusual occurrence for animals well advanced in tuberculosis to abort. This seems to be true, as such was the case in this herd. I observed that eight calves were prematurely born, two of which required assistance at birth, as the mothers were much exhausted. One of the two that were removed was in about the eighth month of gestation. This fœtus on examination was found saturated with tubercles, some of which were as large as peas, and on drawing a knife across them they were found calcified. Tubercles were found in the liver, bowels, diaphragm, and chest-wall; there being none observed upon the lungs. The mother of this calf was killed some weeks afterward, and was found highly tuberculous, the disease being well advanced to the third stage, or stage of suppuration.

No. 2 was from a diseased mother, also in about the eighth month of gestation. On examination I found the liver, diaphragm, and bowels quite thickly studded, but the tubercles were much smaller than in the preceding case. Of the other six prematurely born, I was able to examine only two of them, as the other four had been destroyed before I was acquainted of the fact. One of the two, however, that I did examine, was found to have a tuberculous liver.

During the winters and springs of 1883–84 and 1884–85 fifty-three calves were born to the herd, and each one was examined with reference to the disease. Twenty-nine of the number were found tuberculous in some of the viscera. The greater number of the calves were killed within five weeks after birth, and the whole number before the expiration of four months. I will only call your attention to the most interesting cases. One calf killed at the age of five weeks was found highly tuberculous. The liver was double the normal size and covered with tubercles. On cross-section it was found to contain a large vomica, filled with at least one pint of fluid of a muco-purulent character. Tubercles were also found upon the pleural surface of the left lung; also an extensive deposit in the apex of the same lung. The mesenteric glands were enlarged and cheesy. The bowels were thickly studded and in a state of subacute inflammation. This calf had suffered from a severe diarrhœa for several days, and had failed considerably in flesh.

The mother of this calf was killed shortly afterward, and was found badly diseased. Among the organs affected was the milk-bag, which contained a large tuberculous abscess. In this case does it seem possible for the disease to have been acquired wholly after birth? To my mind it does not seem possible that the disease could have developed with sufficient rapidity to have produced an abscess of the liver in such a limited time. However, I am of the opinion that the intestinal lesions were produced, to a great extent, from the milk of its mother, as undoubtedly the milk must have contained elements of the disease.

In another calf, seven weeks old, the left lung was adherent to the chest-wall at the apex, where there was a large tubercular deposit. Also there were many small tubercles upon the lungs and in other places. The liver and bowels contained many tubercles the size of peas, and on cross-section were found in a state of cheesy degeneration. In the remaining cases the lesions were not as marked, but the disease was none the less apparent.

You have now the history of the herd up to June, 1884, and we find that nearly one-half of the herd of milch-cows has been disposed of, all that were supposed to be diseased having been killed. The remainder of the herd were observed from time to time, and examinations repeated every twenty to thirty days; and upon each examination new cases were discovered, which were immediately removed from the herd, as it was thought they could be fattened and made use of.

The sorting out and feeding continued for several months, and at the time of killing many had not gained at all, while others had taken on considerable flesh; but upon killing only five were found fit for use, and four of these were slightly diseased in some of the viscera.

During the spring of 1885 a number of young heifers, which had been kept upon another portion of the farm, were with calf by the bull killed in June previously. Before putting them with the old herd they were examined, and many of them were found diseased. It was deemed advisable to kill them. The calves of these heifers were all diseased, the disease in one calf being traced directly to the bull, as the mother was found unquestionably healthy. The remainder of the young herd which had been exposed to the disease were put with the remaining portion of the milch-cows, and the combined herds now numbered about forty head. The examinations were still continued from time to time, during the summer and fall of 1885, and occasionally one was found manifesting the usual symptoms of the disease. This procedure was continued until the spring of 1886, when it was thought advisable to feed the remainder of the herd. During the past summer, all were killed except ten, which have been killed during the past month, and in nearly every case disease could be found in some of the viscera, and some badly diseased, as I will show you from specimens that I have here. The specimen that I wish to show you is a very interesting one, inasmuch as it shows that one is not able, at all times, to tell whether or not the animal is diseased. You will observe that the disease, in this case, is confined wholly to the bronchial glands, there being no other organs affected—that is, as far as I have been able to determine. Auscultation of the lungs in this case revealed nothing abnormal, and the superficial lymphatic glands were not enlarged, and the animal had not manifested a cough. The bronchial gland, in a healthy cow, is about four or five inches long, about one inch wide, and one-half inch in thickness. Here we have a specimen, removed from a Holstein cow nine years old, in which we find the gland is about ten to twelve inches in length and nearly six inches in thickness. This, on section, we shall find in some places calcified, and in others cheesy. I also have other specimens here, removed from another case, in which no disease could be found except in the glands, and these without apparent enlargement.

During the winter of 1883 the asylum purchased a full-blooded, registered, Holstein bull-calf, from one of the leading breeding firms of this country. This bull was kept from the herd until old enough for breeding purposes, and then only came in contact with the herd as occasion required. This animal thrived until April last, when I noticed that he began to manifest symptoms of the disease. He was examined at frequent intervals during the summer, and each examination confirmed the previous diagnosis. He was killed on November 16th, last. Previous to being killed he weighed nearly two thousand pounds. On post-mortem I found the left submaxillary gland enlarged and suppurating, the thyroid gland enlarged and calcified, and several deposits in the left lung about the size of walnuts; also tubercles upon the peritoneum and bowels. The liver, in this case, was free from disease. The glands and portions of the lungs I have here for your inspection.

The only possible objection that could be raised regarding the care of these animals was that of ventilation. The stables were kept scrupulously clean, being washed out daily, and there were no cesspools about the barns or yards. The barns are situated upon a side-hill, thus affording the best possible drainage.

Their food was of the best of hay, corn fodder, bran, and vegetables. In the spring of 1884 all of the animals were removed from the barns and put in pasture, and open sheds built for their protection.

During the following winter the animals were con-

fined in the barns only during the time of feeding and milking, they being out during the day and protected at night by sheds open on one side.

Also in the breeding of this herd of stock there was the greatest amount of vigilance exercised in order to avoid inbreeding. Frequent changes were made in the bulls; new cows were bought from time to time of the farmers throughout the country, and these crossed with the Holstein bulls, and at the time of the outbreak of the disease about one-third were animals that had been purchased. In my mind it does not seem possible that the disease, or dyscrasia, had been inherited in all cases. Therefore, if the disease was not inherited in all cases, it must necessarily have been acquired; and if acquired, through what channels did the disease enter the animals' system?

There appear to be only two channels in which it could have entered, the one by inhalation, the other by ingestion. In order to prove that the disease is communicated by inhalation, we have to resort to experiments, but by ingestion we have many striking examples in which it is plainly shown that the disease is acquired by the use of milk and meat of tuberculous animals. In proof that the disease may be acquired by the ingestion of tuberculous substances, allow me to call your attention to the asylum herd of swine, which numbered nearly three hundred head. These animals were kept in different yards. In one the breeding sows; in another, the half-grown pigs, and in the third yard, which was adjoining the slaughter-house, were kept the large hogs which were being fattened. The hogs in this latter pen had access to the offal from the slaughter-house, where a number of tuberculous cows had been killed. Later in the fall a number of the large fat hogs died suddenly in full strength, and on post-mortem were found highly tuberculous. The disease, however, did not present the same pathological conditions as in the cows. The disease seemed more especially confined to the abdominal viscera and the glandular system, the lungs being rarely affected. In those cases that died suddenly I found a tubercular peritonitis, to which was attributed the cause of death. During the killing season many were found diseased, there being large metastatic abscesses in different portions of the body, but more especially in the side; and in the sows the rudiments of the milk-bag were often the seat of abscess. Also the joints were frequently affected, many of the hogs, both large and small, became lame. During the winter a number of them became partially paralyzed in their hind parts. The paralysis progressed, and finally they were unable to use their hind limbs at all, and for several days three of them moved about, walking upon their fore limbs and dragging their hind parts. Still they were fat and seemed to eat equally as well as the others. Finally they were killed, and on post-mortem the bodies of the vertebræ in different portions of the column were found to have undergone caseous transformation. The cord at these points was softened, and in some cases completely obliterated.

There were three sows in this yard that proved to be with pig. They were taken out and put with others in another yard. One of these sows, shortly after pigging, became paralyzed similarly to those that I have already alluded to. In about three months her young pigs became hollow-backed; they walked about with their bellies touching the ground. Finally they were killed. All were found diseased, and the bodies of the vertebræ very incompletely formed. The other two sows became paralyzed and were killed before pigging, but unfortunately an autopsy was not held.

After the killing of all the swine that had access to the offal, and disinfecting the yards, we have since had no more disease in the herd.

In searching the literature on the feeding of tuberculous substances and meats of tuberculous animals, we find that the disease is often transmitted by the use of such products. We find in the work by Herr A. Lydtin, G. Fleming, and M. Van Hertsen the following:

Animals experimented upon.	Affirmative. Per cent.	Negative. Per cent.	Doubtful. Per cent.
1 horse	0.0	100.0	0.0
5 calves	100.0	0.0	0.0
35 sheep	51.4	42.9	5.7
13 goats	84.6	15.4	0.0
60 pigs	65.0	18.3	16.6
17 rabbits	31.2	66.5	2.3
20 dogs	25.0	75.0	0.0
9 cats	55.5	44.4	0.0
6 guinea-pigs	83.3	16.6	0.0
2 pigeons	0.0	100.0	0.0

Of 322 alimentation experiments 259 were made with uncooked food; and of these the affirmative results were 47.7 per cent., the negative results 48.9 per cent., and the doubtful results 3.3 per cent. In 62 experiments aliment was employed which had been cooked for ten or fifteen minutes, and the following were the results: 35.5 per cent. affirmative, 64.5 per cent. negative, and 1 per cent. doubtful.

Classification of these experiments according to the alimentary substances employed gives the following results:

	Affirmative. Per cent.	Negative. Per cent.	Doubtful. Per cent.
117 animals fed with tuberculous matter from heifer	61.5	34.2	4.3
46 fed with the raw flesh of tuberculous cows	13.1	86.9	0.0
91 fed with milk from tuberculous cows	30.7	59.3	1.0
1 fed with milk from tuberculous rabbits	100.0	0.0	0.0
25 fed with tuberculous matter from human beings	36.0	64.0	0.0
33 fed with tuberculous matter from a pig	53.0	47.0	0.0
2 fed with tuberculous matter from a sheep	100.0	0.0	0.0
2 fed with tuberculous matter from a rabbit	50.0	50.0	0.0
3 fed with tuberculous matter from monkeys	100.0	0.0	0.0
5 fed with tuberculous matter from birds	100.0	0.0	0.0

In reviewing these experiments and well-established clinical facts Johne arrives at the following conclusions:

1. The transmission of tuberculosis may be effected from animal to animal, and from man to animals, by the ingestion of tuberculous matters; but this mode of transmission is much more uncertain than that by inoculation.

2. The matters which most certainly transmit tuberculosis by gastro-intestinal ingestion are those obtained from the lungs, the pleura, and the lymphatic glands; the milk of tuberculous animals, with regard to its more or less certain action as contagious matter, coming next to these. Infection takes place less readily with tuberculous matter obtained from mankind than with that from animals.

3. Infection takes place less readily by the ingestion of flesh than by means of substances mentioned in 2; and yet it was employed successfully in seventy-six of the cases shown in the above table.

4. Calves, sheep, goats, and pigs present, as has been already mentioned, and as has been so well shown by Bollinger, the greatest receptivity for tubercular contagium. With regard to the supposed immunity of carnivora, it is not so definite as some authorities believe.

Among experiments which especially merit our attention we mention those made by Gerlach. Of 46 different animals submitted to experiment and fed with uncooked tuberculous substances 35 were infected; of 35 animals fed with uncooked flesh from tuberculous cows 8 contracted tuberculosis; and of 15 fed on cooked tuberculous matter 10 became diseased.

Besides the experiments of Gerlach we may cite those made by Bollinger. The learned experimentalist employed the milk of tuberculous cows, which he gave to pigs, and the conclusions to which his experiments led him, in the presence of pathological preparations de-

rived from them, was that "the prolonged consumption of the milk of tuberculous cows produces miliary tuberculosis in the pig."

I fed thirteen rabbits with uncooked tubercular matter, and at the expiration of fifty-four days found all the rabbits diseased, and to a great degree; the bowels being the principal seat of the affection.

Much has been written during the past few years in regard to the dangers that are attendant upon the use of the milk of tuberculous cows, and many experiments have been performed with a view of determining if such milk is truly infectious. There are many experiments recorded that positively prove that the milk of tuberculous animals will convey the disease to young animals when fed upon it for any great length of time.

The following is from Billings' work on relation of animal diseases to the public health, in which he states that the following were experiments performed by Gerlach, and that the experiments were performed with the utmost care:

"Having a cow afflicted with tuberculosis that still gave milk, it was resolved to use the same to test the question 'whether the milk from such a cow was capable of producing a similar disease in young animals when fed upon it.'

"The cow was seven or eight years old, much emaciated, respiration difficult, and had a rough, weak cough; vesicular respiration perceptible over all parts of the thorax which enclose the lungs, but numerous, unnatural, especially dry, râles were perceptible. In no place was the concussion deadened. No fever. Appetite good. Daily milk quantum, 1,500 grammes. After the lapse of three months the cow was killed. The emaciated condition had gradually increased, and the milk-secretion likewise decreased; in the first month the yield of milk decreased 600 grammes; in the second, 500 grammes, and during the last eight days the secretion ceased entirely, although the animal received all the nourishment she could consume.

"*Autopsy:* The inner thoracic walls, the diaphragm, and the mediastinum were covered with numerous tubercles of variable dimensions; the pulmonary pleura, or covering of the lungs, was far less complicated. The lungs were voluminous and double their normal weight. Nodules and tubercles were distinctly perceptible on palpation. The bronchial lymph-glands were hypertrophied —enlarged—hard and nodulated. Cross-sections of the pulmonary tissues revealed the presence of numerous tubercles and tuberculous devastations; large and small cavities filled with muco-purulent mass, others with caseous material; numerous miliary tubercles were dispersed over the pulmonary tissue.

"With the milk from this cow were fed two calves, two pigs, one sheep, and two rabbits. The first calf died from an accidentally acquired disease.

"Calf No. 2.—A healthy, well-nourished calf, eight days old, was fed with milk from the above-mentioned cow for a period extending over one and two-thirds month; at first it received 1,000, and later 300, grammes of milk daily, an average of about 600 per day; in fifty days the whole quantity of milk consumed amounted to from thirty to thirty-two kilogrammes. Aside from this the calf received other milk; later, diluted milk and oatmeal. Neither phenomena indicated the presence of disease, nor were disturbances of nutritive functions observable. The calf was killed one hundred days from the time that the experimental feeding began, and fifty days after the feeding with milk from the tuberculous cow had ceased.

"*Autopsy:* The pleura of the sharp edges of the right lung was covered with delicate red, filamentous excrescences, which extended as a fringe about a centimetre beyond the edge of the lung. Here and there this neoplastic production formed a connecting membrane in which were to be seen miliary tubercles, as refracting points. The costal pleura, the inner lining of the ribs, was also irregularly covered with a membrane of similar character. In the lungs were to be seen tubercles, otherwise the parenchyma was normal; immediately under the pleura were four small and six miliary tubercles, and more were to be seen in the loose interlobular tissue. The smaller tubercles were more transparent, and had a grayish color, having a firm organic character; in the centre of one of the larger ones was to be seen caseous material. The bronchial lymph-glands were much enlarged; inwardly disturbed by many purulent and caseous centres; here and there lime-salts were perceptible; the tubercle centres extending prominently above the cut surface of the gland. The mesenteric and other glands presented a similar character.

"The microscopical examinations of the tubercles gave the same characteristics as those of man."

"These and more recent experiments prove that the milk from cows affected with tuberculosis is not only harmful, but that it also contains elements of a specifically dangerous character; it is capable of generating elements of a similar character; it, therefore, bears the character termed infectious."

There are many other experiments that are recorded, which tend to show that the milk of such animals is exceedingly dangerous, but I think that it will not be necessary to give you more of them, as they all result in about the same conclusion.

I fed six rabbits with the milk from a tuberculous cow for ten days, and at the expiration of sixty days from the time the feeding was begun no disease was found, but upon killing the cow from which the milk was obtained, I found no lesions in the milk-bag, but extensive deposits in the lungs. I was then led to believe that it was necessary to have a tubercular lesion of the milk-bag or along the lacteal track, thereby allowing the germs to enter into the milk flow. We find that many experiments have been performed with like negative results, consequently many experimenters are disinclined to believe that there is any danger in the consumption of such milk. I observed that in the latter stages of the disease the milk is greatly reduced in its fat elements; the specific gravity in many cases reaching as high as 110 to 115, and the milk bluish and watery in appearance. This fact alone would be evidence sufficient to condemn its use, especially in our children and babes.

It is generally conceded that if tuberculous meats and milk are well cooked previous to usage, there is much less liability of their producing harmful effects.

This calls to my mind a new preparation that has just been introduced into the market, called "Bovinine," the manufacturers of which call special attention to the fact that the blood and the meat of which this preparation is made is rendered into a liquid state without the application of heat. I do not wish to make any reflection upon this preparation, but it does seem as if the greatest amount of care should be exercised in the selection of animals for such purposes.

It is claimed by many that the inhalation of non-tubercular substances, as well as the inhalation of tubercular matter, will produce tuberculosis. In the latter case I can conceive that if tuberculosis is a germ-disease, it can be readily produced by placing the living germ upon fertile soil. In this case it would be in accordance with the laws of reproduction. But when we employ such substances as lamp-black, coal dust, etc., what can be the result other than a local inflammation? I will admit that these substances may become encysted, but I am yet to be convinced that a specific disease may be produced by the inhalation of a non-specific substance.

According to "Sattler-Gunther and Harms, who tried the experiment of causing rabbits to inhale the air expired by tuberculous cows, the results were negative. Later Tappeiner and Lippl added to the air inhaled particles of tuberculous sputa. In all these experiments the animals experimented upon (dogs) developed nodules in the lungs only in some cases, in others in several organs at the same time." In looking over the various experi-

ments we find that wherever tubercular matter has been used for inhalation, the disease is usually produced.

I experimented upon seven rabbits in the following manner, putting them into a tight-woven sack and holding the free end over the nostrils of a consumptive cow. This experiment was repeated seven times, at intervals of five days each. Each time, on taking the rabbits out of the sack, they seemed much exhausted. Forty-five days from the last inhalation they were examined, but all appeared healthy. As such experiments have invariably failed to produce the disease, I am convinced that the germ is not given off in the expired air.

I also performed a very interesting experiment in the following manner: Taking some fresh tubercular matter, rendering it into a solution by adding warm water, I applied several drops of the solution to the mucous membrane of the nostrils of seven rabbits, being careful to hold the rabbit's head up so as to allow the fluid to gravitate and reach the bronchi, if possible. I also tried the same experiment with seven other rabbits, but using fresh sputa from one of my patients in the wards of the asylum. Thirty-seven days after I killed those that had been subjected to the human sputa, and found evidence of the disease in four cases, but to a greater degree in some than in others.

No. 1. Left lung, the lower two-thirds solid in deposit, and a large deposit in the central portion of the right lung. Upon the left side lung adhered to chest-wall, and numerous miliary tubercles upon the pleural surface of both lungs, and several tubercles on the liver, three of which were as large as peas.

No. 2. Left lung contained quite an extensive deposit in the central portion. Several small tubercles upon the liver and bowels. In the other two there were miliary tubercles upon the pleural surface of both lungs, with small deposits in the lower lobe of the left lung of each. The other three were found manifesting no lesion of disease.

The seven that had been subjected to the application of the bovine tuberculous matter were examined upon the thirty-eighth day after the application.

No. 1. Left lung contained an extensive deposit in the central portion, and a small deposit in the lower lobe of the right lung. Numerous miliary tubercles upon the liver and bowels.

No. 2. Deposit in the central portion of the right lung; several tubercles upon the bowels, none being observed upon the liver.

No. 3. No deposit in either lung, but two quite large tubercles upon the diaphragm, and several upon the liver and bowels.

No. 4. Right lung, lower half filled with small miliary tubercles. Other organs appearing normal.

Nos. 5, 6, and 7 manifested no pulmonary lesions. The liver contained several small granulations, but I was not positive as to their being tubercular. The pathological appearances in each class were very similar, and one could not have told but that the lesions had all been produced from the same substance. The sputa and tubercular matters employed in each case were fresh, and only one application was made.

Before giving you the ætological conclusion to this paper, let us consider the sanitary measures that are being exercised in this country, especially in our large cities.

In your city, I am informed that you have about forty-five slaughter-houses, ten large markets, and about two thousand two hundred shops, and that there are about twenty-five thousand head of cows that furnish milk to your city. In July, when I visited your city, I was informed that you had one meat inspector and three milk inspectors, and that no animals were examined previous to being killed. May I ask how much consumed in this city receives inspection? Another important question is: What per cent. of the milk consumed is inspected, and what value can there be attached to the inspection of milk after it has left the hands of the producer, other than to guard against adulterations? I contend that the proper place for the inspection of milk is at the producers' stables, and that the animals from which the milk is obtained should be inspected. I do not believe that too much stress can be put upon this point. On the one hand, if we buy milk that has been adulterated or watered we are swindled. On the other, if we buy milk unadulterated, but from an infectious source, it is our health that is in danger. Now, if there are 25,000 head of cattle that furnish milk to your city, and if two per cent. of that number produce infectious milk, you can imagine the dangers to which your people are subjected.

From my observations of tuberculosis I have formed the following ætological conclusions:

1. In the bovine species, the disease is inherited either from male or female.

2. Tuberculosis is acquired by the inhalation of tuberculous substances.

3. Tuberculosis is acquired by the ingestion of milk of tuberculous cows, when the disease has reached the stage of suppuration, or when there is a tuberculous affection of the milk-bag.

4. The disease may also be acquired by the ingestion of the flesh of tuberculous animals.

THE INFLATED RING IN THE TREATMENT OF ECTROPION WITH CATARRH OF THE CERVIX, STUBBORN RETROFLEXIONS OF THE UTERUS, AND PROLAPSE OF THE OVARIES AND TUBES.

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PROLAPSED OVARIES.

PROLAPSED and hyperæmic ovaries require, in the order of their importance, first, support; second, the prolonged hot douche; and third, possibly, counter-irritation and galvanism. My previous method of obtaining support had been by cotton pads carried up behind the cervix, with the patient in the Sims position. These pads required renewal at least every other day. They were not apt to retain their position longer, and if kept in place longer would become foul. When the pad was removed the vagina required washing out, and it followed that the patient had to make the journey to her doctor's office without her support, or it had to be applied at her own home. Further, when the best had been done the use of the hot douche was still seriously interfered with. It could be given only every other day, when the pad was removed; so that in many cases it was found desirable that the patient with this condition should remain in bed for a number of weeks, in order that she might have the benefit of the frequent douche without suffering from the absence of her pad. The treatment, then, resolved itself into a programme of from four to six weeks in bed, followed by pads to be frequently renewed, preferably at the patient's house; and it resulted that only hospital paupers or the very rich could be successfully treated for this distressing disease. It will not, perhaps, be considered superfluous if I detail a few cases in which rest was impossible, and in which the inflated ring has given relief after other methods at my command had been ineffectually used.

CASE I. was twenty-four years of age, married four years, one child three years previously, no pregnancy since. She came to the infirmary clinic in November, 1885, complaining of constant aching in both inguinal regions. Each step aggravated her distress, and intercourse caused agonizing pain. Dysmenorrhœa was present. the flow lasting for six or seven days and recurring at intervals of not more than two weeks. This patient had been under treatment during the greater

part of the three years, and she had had several consultations over her case. One physician had advised the removal of her ovaries, and another, equally distinguished, had recommended letting them alone, telling her to have patience, that at the age of fifty or thereabouts her pains would be spontaneously relieved. Excluding the chances of oöphorectomy, her case was a sad one. The woman was extremely melancholy, and in relating these circumstances, naively added, "I shall be relieved when I am fifty, but I am now only twenty-five years old." Examination showed the cervix fissured upon the left side, lips everted, cervical catarrh, retroflexion of the uterus, and prolapsus of both ovaries, which were exquisitely sensitive; also a prolapsed and swollen left tube. This patient was treated with the posterior pad, applied twice a week, and in December she reported that she no longer had pain upon intercourse; that she was comfortable so long as the pad was in position; but that when it was out all of her pains would return. Upon examination the ovaries were found still very low, but not so sensitive as upon the first occasion.

In spite of douches and local medication, however, the hyperæmia and catarrh of the cervix continued. At this date an air-pessary was inserted. The patient removed it twice a day for a long hot douche and left it out altogether at night. After wearing it for a couple of weeks the eversion of the lips was found reduced and the discharge had ceased. In February menstruation had become regular. It lasted but three days and was without pain. The patient felt perfectly well, unless she attempted to run the sewing-machine, when some of her old symptoms would return. In March, examination showed the ovaries beyond reach. The tube was still discernible, but there was no discharge, and the pelvic sensitiveness was gone. June 1st, trachelorrhaphy was performed. The cervix was anæmic from the pressure of the ring, and the bleeding was slight. Good union was obtained, and at the date of writing, October 1st, the patient still feels perfectly sound. She remains sterile, but menstruates normally, and examination shows the fundus still forward, and the ovaries above the brim. She has worn no support since the operation, a period of four months. This result is exceptionally good, probably for the reason that the woman was young and that the dislocation had not existed longer than three years.

Case II. occurred in private practice. She was forty-two years of age, had had three children, the last seven years previously. This patient menstruated regularly, the flow lasting one week, and she felt better when menstruating than at other times. Half-way between the periods she had great distress—suffering with sick headaches, transient blindness, and spots before the eyes. She had constantly a profuse leucorrhœal discharge and inguinal pain. She had the ovarian cast of countenance, and was extremely depressed and melancholy. Although surrounded by friends, she would shut herself away and cry by the hour, without attempting to define the cause. She often contemplated self-destruction, being haunted by the fear of a suicidal act. This patient stated that her symptoms dated from the birth of her first child, but that, from the establishment of puberty until becoming pregnant, she had always been "unwell," that she had always worn a napkin, and that the flow was often so profuse as to soak through her clothing and to stain the chair upon which she sat. She was married at sixteen, and her first child was born twelve years later. Whatever construction be put upon the history of these hemorrhages, it is evident that she was not well during the period; while after the birth of this child she was almost constantly under a doctor's care. Examination showed a slight rupture of the perineum, fissured and everted cervix, cervical catarrh, retroverted uterus, and both ovaries sensitive, enlarged, and prolapsed. This patient lived out of town, and could not have been treated by pads. The ovaries could be readily replaced, and November 21, 1885, an air-ring was inserted, to be removed at night for the hot douche, and to be returned in the morning. In December she no longer had constant pain. She had menstruated without the usual aching in the thighs, and with but two days of headache, during which no nausea was felt. By examination the fundus was found forward and the ovaries just at the brim, but not in a position to be compressed. In January she had no pain, and the ovaries were beyond reach. The air-ring was then exchanged for one of Meiggs' elastic pessaries, as recommended by Dr. Thomas, and as a more elegant instrument, and one probably more acceptable to the patient. At the end of two weeks, however, she returned in great distress, deeply despondent, with headaches re-established, and all of her old sickening pains. Examination showed a full return of the retroversion and prolapse. The air-ring was returned January 24th. February 2d, the pelvic distress had been relieved but the headache continued. In March she again felt well, having menstruated without any cerebral disturbance. In this case, also, the eversion of the cervix was reduced, so that the gaping os had given place to a smaller lengthened cervix, with a vertical division of its lips. The discharge also had ceased. The summer was passed at the seaside, and with the help of a well-fitting pessary she was perfectly comfortable and cheerful, and gained fifteen pounds during the period. Since her return she has *cleaned house*, however, and between the stretching implied by this exercise and a pessary which does not fit very well, she has had a return of pelvic distress, but no constitutional disturbances comparable with her former symptoms.

PROLAPSED AND SWOLLEN TUBES.

Case III. was an old case of retroflexion treated at the infirmary clinic. She was previously sterile, but had conceived while wearing a hard-rubber ring. Following her confinement, she had suffered from endometrial catarrh and was using the hot douche for this condition, one day, when she was suddenly seized with cramps, and during that night had a good deal of pelvic pain. On examination the left tube was found behind the uterus; swollen, the fimbriæ rounded, tense, and very sensitive. From the history it was supposed that the nozzle of the syringe had been placed against the cervix, and that the uterus, and possibly the tube, had been thus injected. The hard pessary was removed and an air-ring inserted; the patient continued her hot injections twice a day, discomfort was relieved, and in the course of a month she was again wearing her hard ring with ease. This was an acute condition and may prove nothing, except that acute conditions resolve more rapidly than chronic conditions do. Support of some kind, however, seemed necessary. The hard ring was not to be thought of, and even the violence of pushing up a pad was to be avoided. Without a support she would have had a persistently retroflexed uterus blocking up the pelvis, and interfering with circulation. Resolution could scarcely have occurred so rapidly, and with so little suffering, under these circumstances.

Case IV. was treated at the Demilt clinic. She was thirty years of age, a widow, one child thirteen years previously. Menstruation was scanty, lasting three days without pain. For four years she had had constant distress in the inguinal regions, which was even worse on lying down, but no constitutional symptoms were complained of. On examination the uterus was found in position and movable, but behind the uterus was what my clinical assistant called a nest of objects. Sometimes the tenderness would allow only the general fulness to be recognized, but at other times both tubes could be distinctly traced up to their respective horns. They were about as large around as the little finger, and at their extremities very sensitive. The ovaries did not appear to be implicated. This patient was under observation, at irregular intervals, during a year. The posterior pad was used, but the great sensitiveness would not allow it to be

effectively applied, and her employment of the douche was probably very irregular. No improvement occurred, and in August of the present year an air-ring was inserted. The patient then remained away six weeks, but finally returned for the reinflation of the ring. She stated that it had given complete relief, and added incidentally, that when first worn it had caused a profuse discharge, with a good deal of vulvar and vaginal irritation, but that this had ceased at the end of a few days. Examination, then made, showed but one tube where two had before been clearly made out. Apparently one had emptied itself at the time of its first elevation. The use of the pessary is continued, the patient presenting herself at the clinic only when inflation is required.

RETROFLECTIONS.

Two other cases may be mentioned. Both were cases of retroflexion which had defied our resources. For the sake of identification, the first of these may be called:

CASE V.—She was twenty-seven years of age, married about a year, menstruation regular during this time. She came to the Demilt Dispensary for sterility with retroflexion, which was relieved by a Thomas pessary. She became pregnant while wearing this ring, but aborted at the end of the third month. After this abortion the uterus remained heavy, and it was found impossible to properly support it with any of the retroversion-rings. Upon every occasion the body would fall back over the posterior bar, and a series of dents were being worn in the wall of the uterus as the different pessaries were tried. An air-ring was introduced, and pregnancy shortly followed. The use of the ring was continued until the pregnancy had safely passed the fourth month and the danger of retroflexion was at an end.

CASE VI. was probably a congenital retroflexion, as the uterus was simply doubled up. It had been under observation at the Demilt clinic for a year, and it never had been possible properly to support it with a ring. Its posterior wall showed the same series of dents, but more marked than in the other case. Dysmenorrhœa had always existed. June 14th, an air-ring was inserted. On the 17th the patient reported that she had been more comfortable with it than with any previous support; and July 16th, she reported that she had menstruated with but little pain; that she had not needed to go to bed, as was generally the case. Examination showed that the body was supported in a position at a right angle with the neck, this position being maintained after the removal of the ring; in every way a better showing than had been previously obtained.

Incidental results.—There have been several incidental results connected with the wearing of this ring that will also, perhaps, repay consideration. The first of these has been the disappearance of cervical catarrh. In Case I. the cure of the catarrh occupied about two weeks. This result has been fairly uniform. In another case, to test the effect of the ring, no other application was made. This case may be called Case VII. of this paper. There was a deep fissure with a tender cicatrix running down the posterior vaginal wall. There was sacral pain and an abundant leucorrhœal discharge. The eversion was very marked, and the eroded lips bled at a touch. This patient was at the time also suffering from pulmonary phthisis. She was overworked, and in an extremely emaciated and cachectic condition. At first each introduction and withdrawal of the ring brought blood, but at the end of two weeks, in spite of her general ill-health, the erosions were found healed, the eversion reduced, and the discharge no longer noticeable. With the stretching of the cicatrix the backache also had disappeared.

This reduction of the eversion and loss of the catarrh seems due to a moulding of the cervix to fit the aperture of the ring, when the everted parts take their normal position and the fissure the form of a vertical cleft. The ring then acts as a splint in holding these parts in position, and by actual compression, perhaps, produces the cure, acting with the beneficence of the bandage in the varicose ulcer in other parts. Its effect in controlling menorrhagia has suggested, further, some compression of the uterine artery. Shortening of the periods has occurred in a number of cases in which it was worn. Case I., finally thinking that she did not menstruate freely enough, would remove the ring in order to encourage the flow. It might be surmised that the cervix was occluded by it so as to prevent exit; but this was evidently not the case, as there was no pain connected with these periods.

A second incidental result has been the relief of symptoms in the cases of prolapsed ovaries. The women remain sterile. There is no reason to suppose that the ovaries have been restored to a healthy condition, and yet, both in the cases here reported and in other cases, the local pain, the deranged menstruation, the psychic difficulties, the disorders of the accommodation, and the headaches have disappeared. Apparently the symptoms were not due to the disease *per se*, but to the compression of this diseased part.

A third incidental result has been a discharge, apparently from the tube, noticed in a number of cases.

For some time it has appeared to me that if these tubes be sufficiently cleared, they may completely empty themselves through the uterus. Not long ago a posterior pad was applied in a young woman, having a large, low-lying tube. She returned with the complaint that, during the twenty-four hours following the application of the pad, she had had a profuse greenish discharge, which was excessively irritating, and examination showed the vulva and vagina in a highly congested and angry state. Another case once volunteered the remark that she always had a greenish discharge following the application of the pad. The pad was lubricated with vaseline in all of these cases. Glycerine never was used. The discharge never has been bland in my experience. It always excoriates, and is, perhaps, a sufficient explanation of the pelvic peritonitis which accompanies tubal affections.

A fourth peculiarity of the result of this ring has been that the flexions overcome by its use do not immediately return. It has then a curative tendency in these conditions. This is a remarkable fact for association with a pessary. The popular idea has been that a pessary, once worn, must always be worn; that is, that if it be removed, the displacement will return in an aggravated form; that its use tends to weaken rather than to strengthen the defective part. If we except the immediate reduction of retroflexions following childbirth, which are, as a rule, easily curable, this opinion is indorsed by my own experience. Retroflexions supported on the usual pessary tend to return upon its removal, and to be thus ultimately aggravated rather than improved. The opposite has occurred in cases wearing the inflated ring. A friend with a large gynecological experience spontaneously made to me this same remark. Said she: "A case of retroflexion and prolapsed ovaries upon which I have used this ring is now going without any support, and the uterus retains its position." For some reason, the broad ligaments regain a degree of elasticity and muscular tone. Possibly the removal of the ring at night has something to do with this result, for we know that while the too heavily weighted muscle contracts badly, it functions better if allowed to do some work than if not doing any at all. It is possible, then, that by our method of application we get not only the necessary rest, but also the necessary stimulus to good muscular tone.

Conservative gynecology.—Without touching upon the question of operation, there will remain many cases of catarrh of the tubes, to whom suitable support offers temporary relief by protecting the sensitive fimbriæ from compression, and also possibly the chance of a spontaneous cure by drainage. Of course this can only take place where proximal occlusion has not occurred. Apparently, however, proximal occlusion is not common in these cases, as a classic sign of salpingitis is an intermittent dis-

charge of pus. Failing the indications for operations, then, we need not abandon these tubes, but elevate them, and thus give relief, perhaps, and this chance of spontaneous cure.

The writer would like to protest, too, against leaving prolapsed ovaries alone, in the hope that the atrophy of the menopause will solve the problem which they present. It has seemed to her that cases of ovarian disease, cystic and other degenerations, occur more commonly where there has been a history pointing to a long-standing ovarian prolapse. Preventive gynecology merits attention. A better care of the woman after childbirth is required. Prolapsed ovaries are largely associated with retroflexion, subinvolution, a fissured cervix, and cervical catarrh. By examining the woman six weeks after her confinement this retroflexion can be easily relieved, and possibly prolapse of the ovaries prevented. Also, early operation upon the fissured cervix itself merits attention. If this repair can be safely done at the time of the confinement, all conservative considerations urge that it should be then done; as it will remove an absorbing surface during the puerperal period, as well as the lymphangitis and all its train of subsequent results.

Further, the young girl might be allowed to develop her broad ligaments so that her uterus will not wobble about so loosely. All of us have met cases where, with the perineum torn to the sphincter, the uterus remained in a firmly upright position; and the writer has previously referred to the fact that circus-riders apparently do not suffer from these displacements where their training has been commenced in early youth. Yet these women bear children, continuing their performances through the seventh month of pregnancy, and recommencing them shortly after their confinement has taken place.

How the conventionally restricted girl can obtain this development is, however, too large a problem for the writer of this paper.

The inflated ring.—In all of the cases detailed the simple ring without the tube attachment was used. These rings, as perhaps all know, have a lump of wax upon the inner surface of the rubber at a given point. Through this wax a hypodermatic needle may be plunged without injuring the usefulness of the ring, and by means of the needle the ring may be inflated, or air can be withdrawn. When the needle is removed the wax is to be gently compressed. In all of the cases here given there was a firm anterior vaginal wall, while the posterior vault was, as a rule, prolapsed. It was therefore found desirable to remove a little of the air from the fully inflated ring previous to its insertion, as this would allow its closer approximation to the parts. The anterior wall then would indent the anterior bar, while the posterior bar would spontaneously rise and buoy out the culde-sac posteriorly and upon the sides, the position when the patient stood being oblique, approaching the vertical in direction. The fully inflated ring will cause a feeling of weight in the perineum and irritability of the bladder, symptoms never complained of where a little of the air has been removed. In fact, it seems doubtful whether I could have obtained the advantages I have had from this ring had full inflation been insisted upon.

Another precaution has been, as already explained, the frequent removal of the ring. In cases where the patient has no pain when recumbent, it has been left out at night. It is then immersed in a solution of soda bicarb. or some disinfecting solution. The vagina escapes erosion by these intervals of rest, and the instrument does not become foul as when longer retained. As there is no danger of improper insertion, the woman removes and inserts it herself. All of our patients have been married women. Unmarried women would probably not be able to manage it; still, when but partially inflated, the ring may be folded into a spindle-shaped mass which enters the vagina without great difficulty. When inserted the patient assumes the knee-elbow position, when it rises spontaneously to its proper place. The ring requires reinflation every one to two weeks, and renewal every one to three months.

It has been objected that this is an exceptionally disagreeable ring to introduce and wear. Perhaps it is, but the patients for whom it was prescribed had been such sufferers that this objection became shadow-like and faded away in their presence. It is objected, that it erodes the vagina and takes on a fetid smell. As has been already remarked, this does not occur where it is removed at night and cleansed as directed. It is also said to distend the vagina and to destroy its elasticity. It has not, however, seemed to me more destructive than the prolonged use of pads.

The effect upon the cervix has suggested that this ring might produce atrophy if worn too long. This will probably have to be guarded against. While the external circumference of rings varies, the hole in the middle is about the same for all. As the cervix moulds itself to fit the hole, it follows that this uniformity is objectionable. A larger hole is desirable in some cases. Instrument makers tell us, however, that this modification cannot be lightly undertaken, as, from the intricacies of their manufacture, new models would be required which could only be introduced at a considerable expense.

The prolonged hot douche.—The hot *douche* forms an important part of the treatment in these cases. Some remarks have been recently published regarding the position to be taken by the woman when she must manage her *douche* alone. It has been found that she will not effect an injection of satisfactory duration when lying, and an injection when sitting over a bidet has been suggested. But a large proportion of the patients whom I treat do not have a bidet, and it has been my custom to have them place the hot water in their *pot de chambre*, to sit upon this vessel at a distance of about two feet from the wall, and then to tip themselves and the vessel so that their back rests against the wall. In all cases the Davidson syringe is preferred; and except where the leucorrhœa is a prominent feature, the same water is continuously used, the woman having at her side a pitcher of hot water with which to replenish it as it becomes cool. The patient then uses the *douche* ten minutes by the clock. The continuous use of the same water was adopted because it requires but one receptacle, while it insures the prolonging of the *douche* for the time indicated. As noted by a number of the correspondents referred to, this result cannot be obtained where the woman must rise to replenish the water in the midst of the *douche;* while it has been found that compliance with the smallest of the details here given can be obtained even among the most stupid of our tenement-house population. The position is, of course, not so desirable as the reclining position, but it is, perhaps, the best which can be devised for these people.

To RECAPITULATE.—The old inflated ring may be made useful: first, as a substitute for cotton pads in the treatment of prolapsed ovaries and tubes; second, to support the retroflexed fundus where it cannot be effectually lifted by other means; and third, for its decidedly beneficial influence upon cervical catarrh.

In the latter condition it reduces the hyperæmia by direct compression, or by direct compression aided by pressure upon the uterine artery. Pressure upon the uterine artery is suggested by the fact that the application of the ring as here suggested diminishes also the uterine flow. The peculiarities of application referred to are that the ring should not be tensely inflated, and that it should be used in cases having a firm anterior vaginal wall. As a preparation for trachelorrhaphy it cannot be too enthusiastically admired.

The results obtained by this ring in retroflexions contrast favorably with those of other rings, in that they tend to be permanent. It is, therefore, curative in its action, an admirable quality, even if true only in a slight degree.

As a support for ovaries and tubes, there is no instrument with which to compare it. Even though the superiority of the cotton pad be retained, where the patient must leave home, or for any reason cannot have her physician's constant attendance, this ring can be confidently used.

Other cases might have been detailed, but to avoid tediousness we have only given a number sufficient to show typical results.

For the detection of prolapsed or diseased ovaries and tubes, the Simms position is preferred, and examination with the patient upon the left side has been advantageously supplemented by examination with the patient upon the right side in some cases. In this position the prolapsed tube is not an indefinite mass, but can be recognized as in continuity with the uterus and traced up to its respective horn.

The preventive treatment of ovaries and tubes is in its infancy. Probably in a few years the measures here suggested will seem crudely ineffectual. Better means of combating the incipient stages of diseases in these organs must mark the course of gynecological progress in the future.

Clinical Department.

THE PREVENTIVE TREATMENT OF PUERPERAL ECLAMPSIA.

Dr. J. G. Palmer, of Oak Bowery, Ala., sends a communication upon the prevention of this most dreaded complication of pregnancy. Eclampsia he regards as essentially connected with uræmic poisoning, associated with, or dependent upon, albuminuria. He is inclined to believe that carbonate of ammonia is the real factor in producing eclampsia, associated with other pathological conditions of the nervous system so often manifested during pregnancy. He does not regard the albuminuria as due to inflammatory lesions of the kidney, but believes it is the result of mechanical causes, produced by pressure of the gravid uterus upon the kidneys, resulting in congestion of the renal vessels. The excrementitious products are retained, and urea is absorbed into the system and is converted through the action of some as yet unknown ferment into carbonate of ammonia. The writer believes that the convulsions may always be prevented, if the patient is seen in time, and he says that he has never yet seen a woman suffer from eclampsia who had consulted him for relief of the symptoms preceding puerperal convulsions. He reports the following cases:

"Case I.—In February, 1885, I was called to see Mrs. W——, aged thirty-six, the mother of eight children. I found her nearly blind, complaining that cobwebs were before her eyes, and screaming with the pain in her head. The face, hands, and lower extremities were very œdematous, and the patient had passed very little urine in the past thirty-six hours. The urine was loaded with albumen. I gave her twenty grains each of chloral hydrate and bromide of potassium, and ordered ten drops, gradually increased to twenty drops, of spirits of chloroform three times a day. I also ordered ten drops of tincture of digitalis to be taken before meals, and cascara cordial for the bowels. The next day I found the patient free from pain, with good vision, and the urine had increased in amount. In ten days the œdema had disappeared, and the urine contained hardly a trace of albumen. The woman was delivered at term of a living child, and had no symptoms whatever of her former trouble.

"Case II.—Mrs. D—— consulted me when she was eight and a half months advanced in pregnancy, complaining of dizziness, cephalalgia, obscure vision, and diplopia. The urine was scanty and albuminous, and the feet, legs, hands, and face were œdematous. I put her on ten drops of chloroform three times a day, and ordered ten drops of tincture of digitalis and twenty of fluid extract of buchu, to be taken before meals. I also advised her to take out-door exercise, to eat sparingly, and at short intervals, and to drink plenty of sweet milk. In one week the œdema was gone, there was but little albumen in the urine, the appetite was normal, and the bowels were acting regularly. The patient was delivered at term of a living male child, and had a very easy labor.

"Case III.—Mrs. G—— wrote me concerning some strange symptoms she was having. She was eight and a half months advanced in her first pregnancy, and her troubles were somewhat similar to those narrated above. As she was living at a distance, I could not examine her urine, but believed her to be suffering from uræmic poisoning, and sent her prescriptions for the chloroform and digitalis, telling her to keep her bowels acting freely. Relief followed immediately, and the patient was delivered at full term of a living child, and had no signs of eclampsia.

"I could relate the histories of several other cases of a similar nature, but these are sufficient to demonstrate the efficacy of the treatment. I am indebted to Dr. Griggs, of West Point, Ga., for suggesting the use of chloroform in these cases of uræmic poisoning if we may call it by that name. I shall not attempt to say how it acts, unless it be by preventing the decomposition of urea and the consequent formation of carbonate of ammonia, or by rendering the constituents of the urine more soluble and thus favoring their elimination through the ordinary channels. It perhaps has a sedative effect upon the nervous system, thus allaying much of the abnormal excitability. Although we must regard it as an empirical remedy, I can say that it has never failed in my hands, and others who have used it have met with equally favorable results. The use of digitalis in such cases is an original idea. I believe it is of great service as a diuretic, causing the excrementitious material to pass off with the urine, thus ridding the system of much that might be productive of evil. It is also of service as a heart tonic, assisting an already overworked and hypertrophied heart in the performance of its functions. I am not much of a believer in the cumulative action of digitalis, but I always try to use a reliable preparation. I can heartily recommend this mode of treatment to the profession, and I think it is of much greater value than is the use of veratrum, morphine, and calomel. The lancet should be used freely in cases of plethora or where much congestion is present, cases which are by no means rare."

THE TREATMENT OF WOUNDS OF THE BLADDER.

Dr. John Homans, Surgeon to the Massachusetts General Hospital, Boston, Mass., writes: "As bearing on the subject of the suprapubic operation for stone, which is being revived at this time, I may say that I have twice cut open the bladder during an ovariotomy. The first time was in my seventy-second case (one of dermoid tumor). The incision in the bladder was carefully sewed up with a continuous suture of silk, care being taken not to include the mucous membrane in the stitch. The bladder was closed tight, and a Sims catheter was kept in the urethra. The catheter was removed on the tenth day. The temperature was never above ninety-nine degrees, and there have never been any vesical symptoms at that time nor since. The second time was in my two hundred and tenth case—one of double papillomatous ovaries, the patient having been tapped eighteen times in five years for the removal of ascitic fluid. The wound of the bladder was more extensive than in the first case, and required twelve interrupted sutures of silk, in which the peritoneal and

muscular coats alone were included. A catheter was kept in the bladder seven days. After that time the urine passed naturally. In neither of these cases was the bladder drained through the abdominal wound. If the catheter in the urethra will drain the bladder, it would seem unnecessary to have another exit in the roof of the bladder. It would be well, however, to leave a drainage-tube in the integuments over the sewn-up bladder in case there should be any leakage."

THE USE OF COCAINE IN CORYZA.

Dr. Amory Chapin, of this city, writes: "I desire to attest to the beneficial results of cocaine in acute coryza. I have used the cocaine solution on a number of patients with throat and nose disease, who have been and are subject to 'cold in the head,' and have prescribed for their own use the four per cent. solution of cocaine whenever they were troubled with the disagreeable affliction, and it has been almost universally successful, often aborting the disease. I have found the combination of 'Dobell's Solution' with the cocaine work better even than the cocaine alone. I advise the use of the combination solution in an atomizer (hand bulb), and recommend that the solution be warmed to an agreeable temperature before being used in spraying the nares."

SUCCESSFUL PASSAGE OF A SAFETY-PIN THROUGH THE INTESTINES.

Dr. John C. Owens, of Plainfield, Ill., writes that, having just read an article in The Record, from the pen of Dr. Reed, on the subject of foreign bodies in the intestines, there is recalled to his mind the case of an eighteen months old child whom he was called to see some two years since. The little patient had not been well for some time; would seem to suffer pain at times, but as the source of the trouble could not be detected, the mother thought she might be mistaken. "The child grew worse, and I was sent for. On reaching the house, which was several miles in the country, I was informed that the child, a short time before my arrival, had cried out with pain while having a movement from the bowels. On examining the passage, great was the surprise of the mother to find a safety-pin about one inch in length, opened. Just when it had been swallowed was not known, but the mother thought a month or six weeks before, as the child had not seemed well during that time. No unpleasant symptoms followed the passage of the pin. To me it seems a remarkable case, from the fact that the child must have removed the pin from its clothing and swallowed it; and one could hardly imagine that a triangular object of that size, with a sharp point, could make its way through the intestinal tract of so small a child without lodging at some point, or causing more serious symptoms."

INTUBATION OF THE LARYNX.

Dr. D. A. K. Steele, of Chicago, calls attention to an error in the article by Dr. Northrup, on Laryngeal Diphtheria, which appeared in The Record of December 11th. The author made the assertion that there was no danger of the tube slipping down into the trachea, and said that such an accident had never been reported. Dr. Steele writes:

"I question the correctness of this statement, and am surprised that the pathologist of the New York Foundling Asylum should make it. Dr. Northrup seems to be perfectly familiar with the statistics of laryngeal tubage; as he condenses, classifies, and compares the reports of one hundred and sixty-five cases, yet singularly overlooks the occurrence of the accidental slipping of a tube into the trachea, reported by Professor Waxham as having occurred in his second case, and which was fully reported to the Chicago Medical Society, October 5, 1885, and published with other cases in the *Chicago Medical Journal and Examiner* for November, 1885. I call attention to this, as I believe it was the first recorded instance of the accident, and happened before the modifications of O'Dwyer's tubes by enlarging the shoulder and thickening the middle third of the tube. With the improved tubes, this accident would be much less likely to occur."

Progress of Medical Science.

Natural History of Tuberculosis and the Bacillar Theory.—Dr. R. B. Davy, of Cincinnati, has lately read two papers before the medical societies of that city, in which he thinks he has shown the infectious theory of tuberculosis to be supported in every respect by the natural history of the disease. He does not lay particular stress on the "bacillus tuberculosis," and speaks of the poison more as "tubercular virus;" but insists that, like all other organisms, it is a creature of heat and moisture. From the fact that its appearance and extension are only noticed to occur in confined spaces, and its disappearance most favored in unconfined spaces, he concludes that the danger of infection depends more upon quantity than quality of poison. After extensively discussing the natural history and climatic treatment of the disease, he comes to the following conclusions: 1. That tubercular phthisis occurs most frequently and most fatally in warm or hot regions, characterized by a non-porous soil, and the ordinary accompaniment of excessive humidity of atmosphere. 2. That it depends upon a specific organism, which can be made to produce the disease by inoculation. 3. That the key to the introduction and development of this organism in the system is ordinarily some form of irritation. 4. That the disease is plainly curable in all its forms except the acute, and even this may not always be fatal. 5. That to the predisposed it is communicable by infection through the medium of a polluted atmosphere. 6. That the infection depends upon quantity rather than quality of virus. 7. That on the open sea, where every condition favoring the development of tuberculosis is present, except the presence of tubercular spores, the disease speedily disappears. 8. That the nearest approach to perfect immunity from tuberculosis is to be found on high mountains, where, on account of extreme rarefaction and accompanying dryness of the air, the tubercular organism cannot exist.

Increased Means of Isolation Necessary in Checking the Prevalence of Scarlet Fever.—Dr. William Squire, in a paper published in the *British Medical Journal*, October 30, 1886, emphasizes the necessity of strict attention to isolation as a means of reducing the frequency of scarlet fever, especially in the larger cities. He says that diseases propagated by personal infection, such as scarlet fever and small-pox, have shown no diminution under extensive sanitary works, but require measures of isolation for their control; they are not checked by the great improvements in drainage and water supply that have proved so efficacious against the prevalence of diarrhœal diseases, and especially in diminishing the amount of enteric fever. He shows that the better classes can be generally isolated sufficiently at their own homes. But for the poorer people institutional facilities are necessary. He concludes by maintaining that in scarlet fever isolation is our only means of guarding against infection; we cannot provide for ourselves or others the immunity against this disease that vaccination affords against small-pox. No modified form of scarlet fever will insure against its recurrence in a more severe form. Were we to inoculate from a mild case of the disease, it is likely we should set up a severe, and it might be a malignant or fatal, form of the disease; however mild a form might result, others would be in danger of

being infected from it, and every case risks the well-known after-complications. The milder epidemics, conveyed through the medium of milk from the cow, would continue to spread and give rise to serious effects, if not so narrowly watched and exterminated. The modified disease lately discovered in the cow, though it produced but slight illness in some cases, did not do so in all. It is not an unusual thing to see scarlet fever happen twice, as it were: a child has sore throat and very little rash, or none, yet the illness is followed by desquamation, and it may be with other marked characteristic after-effects; a year or two after, this child is exposed to scarlet fever and has well-marked rash, a short illness, and no desquamation. Reinfection from scarlet fever has recently occurred, to my knowledge, in a child four weeks after a first typical attack; the second attack being the more severe and both followed by desquamation. If the unmodified virus does not confer immunity from a future attack, it is not likely that a modified virus will do so. How are we to protect by inoculation in a disease not clearly self-protective? The only answer here, as in diphtheria, is by preventing the intercommunication of the sick with the healthy.

The Alleged Curability of Tubercular Meningitis by Iodoform Inunctions.—Apropos of this subject Dr. Oxley, a correspondent of *The Lancet*, calls attention to the following points: Tubercular meningitis can only be diagnosed with certainty by post-mortem examination, therefore we must take with great caution any statement of a cure having taken place. It is simulated by typhoid, so as to be with great difficulty distinguished from it. The same may be said of suppurative pericarditis. Tubercular meningitis is an affection of the brain depending upon general acute miliary tuberculosis, and is usually accompanied by a deposit of nodules in and upon the lungs, pleuræ, liver, spleen, and kidney. Tubercular meningitis cannot be considered as a disease *per se*, although, owing to the fact that effusion into the ventricles of the brain, when excessive, produces death rapidly, it is convenient to consider separately this phase of tuberculosis. The effusion into the ventricles is caused by occlusion of the vessels by nodular growths of tubercle in their walls. If the iodoform rubbed into the scalp cured tubercular meningitis, then it must cure general miliary tuberculosis, as the head-affection is only one of the expressions of this general disease, which it modifies so as to make it hardly recognizable. Thus, in a case of tuberculosis complicated with meningitis and effusion into the ventricles, we have the temperature never above 100°; pulse from 80 to 100 up to the day of death, when it becomes rapid—156 or more; whereas in the acute tuberculosis, uncomplicated with effusion, we have a pulse of from 152 to 190, and a temperature of from 103° to 104.5°. In the first case, with meningitis, death takes place in from seven to fourteen days, and the patient is insensible most of the time; in the second, with the same general disease, minus the effusion, we have death occurring at the end of from fifteen to thirty days, and the patient is often sensible to the very last.

Tuberculosis and Scrofula.—About two years ago, as the result of some observations of his own, Dr. Arloing found that both the guinea-pig and the rabbit were affected by the inoculation of pulmonary tuberculosis, while glandular scrofula did not cause any visceral lesions in the latter animal. He did not, on this account, feel justified in believing the two affections to be absolutely distinct, but, at the same time, he was forced to the conclusion that if they had a common origin, its activity was markedly attenuated in scrofula. With this idea, he has since applied himself to find out whether it was possible to augment the virulence of scrofula to such an extent as to enable it to affect either animal indifferently. The guinea-pig is extremely susceptible to both tuberculosis and scrofula, and the latter invades its economy with such ease, and assumes such a malignant character, that it occurred to him that, by inoculating it through several generations in the guinea-pig, he might be able to increase its activity enough to overcome the resistance offered to its invasion in the organism of the rabbit. The experiment, however, showed that this was not the case. Among the bone and joint affections of human beings, known as localized tuberculosis and surgical tuberculosis, some are beyond the reach of art, while others are improved, if not cured, by surgical intervention; the latter are scrofulous lesions, the former tubercular, though of a milder form than that occurring in the lungs and serous membranes. Now, if rabbits and guinea-pigs be inoculated simultaneously with material drawn from lesions of this kind, it sometimes happens that the guinea-pigs develop the characteristic lesions of miliary tuberculosis, while the rabbits escape with a little localized suppuration, or a formation of fine granulations in the subcutaneous connective tissue, just as in the case of inoculation with scrofulous matter. But if other rabbits be inoculated with the tuberculosis thus developed in the guinea-pig, they almost invariably contract well-marked pulmonary tuberculosis. The organism of the guinea-pig is thus capable of augmenting the intensity of feeble tubercular virus, but is unable to do this for the virus of glandular scrofula. Dr. Arloing is of opinion that this curious disparity merits attention, more especially as the present tendency is to group scrofulous and tubercular manifestations under the same head, whereas there are undoubtedly very material differences between them—enough, indeed, to render further evidence of the identity of the virus in the two affections necessary before their common origin can be accepted.

Double Dislocation of the Jaw from Vomiting.—Dr. Elmer E. Curtis, of Rochester, N. Y., writes as follows in the *Medical Press of Western New York* for October, 1886: "On August 1, 1886, I was called to see Miss K——, whom I found suffering from gastro-enteritis of two weeks' standing. I found her much weakened and emaciated; prescribed for her, and in the evening was informed that she felt much better. On the following morning she felt so much improved that she, contrary to my instructions, indulged in a glass of beer, which produced a violent paroxysm of vomiting. I was summoned in great haste and informed that *Mary* (my patient) *had vomited her jaw out.* I found, to my great surprise, that she had produced double dislocation of the jaw, which I reduced with some difficulty. I report this occurrence because it seems to me to possess unusual interest, both in the manner of its production and from the fact that both sides were dislocated instead of but one, as is generally the case."

Granuloma Fungoides.—An account of a case of this rare affection has been published by Drs. Carl Hochsinger and Eduard Schiff, of Vienna. The disease began, in 1877, as a chronic eczema of the back, which gradually spread over the body. In 1883 the head was attacked, and soon became the seat of characteristic ulcerating nodules. The patient, a female, died in November, 1885. The authors describe the histology of the affection as a nodular formation of granulation-tissue replacing the normal structures of the cutis and the papillary body. A delicate reticulum supports the round cells, and in no part are any giant-cells detected. The transition to healthy skin is gradual. The new-growth is not very vascular, and as it spreads it rapidly destroys the cutaneous capillaries. Described previously under such names as *lymphadenie cutanée*, *sarcomatosis generalis*, its alliance with specific inflammatory formations has been proved by the discovery of micro-organisms in the tissue. Rindfleisch gave it the name of *Mycosis fungoides*. Hochsinger and Schiff, in the present case, ascertained the presence of streptococci in the vessels, leading to the obliteration of the latter. They instituted a series of culture-experiments, which appear to prove that the micro-organism is distinct from the pyogenic forms.

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THE COMING TREATMENT FOR PHTHISIS.

THE treatment of phthisis by medicated gaseous enemata, devised by Dr. Bergeon, of Lyons, has recently received the attention and measured approbation of Dr. J. Henry Bennett, who gives a full account of it in the *British Medical Journal* of December 18, 1886. We have already explained the general principles of Bergeon's method. He found that carbonic acid gas introduced into the system by the veins of the intestines was harmless, painless, and without special medical effect; in other words, it was a practically inert gas. He then medicated this with sulphuretted hydrogen, and the medicated gas was injected per rectum. The sulphurous gas was eliminated by the lungs, causing remarkably beneficial effects.

Dr. Bennett says: "Dr. Bergeon claims marvellous therapeutic effects for this medication. He says that he has been applying it for the last two years to all the cases of chronic pulmonary and throat disease that have come under his observation; indeed, in more than two hundred cases, although the experiments were made at Lyons, where the climate is bad, the results have been successful to a degree that has surprised and astonished him. He says that, in early phthisis, even in acute general phthisis, a form of the disease nearly always rapidly fatal, in two or three weeks there is generally an arrest, and in a few months a cure. Even in advanced, incurable phthisis, great amelioration is obtained. The pulse is lowered, the temperature falls, the night-sweats cease, the appetite returns, the expectoration rapidly diminishes, losing its purulent character, and the cough becomes less harassing and frequent. The amelioration, he says, is also rapidly obtained in advanced laryngeal phthisis, when all local or constitutional treatment has failed to give ease, or to arrest the ulcerative process. Asthmatic attacks are relieved with more certainty than by any other means, including the hypodermatic injection of morphine.

"These are very marvellous statements; but, coming from a scientific man of mature age, occupying a prominent orthodox position in a great medical centre (Lyons), and brought forward as the result of several years of trial and observation, they must command attention and counter-trial. Certainly, to pass from eight to ten or twelve litres of medicated gases through the intimate structure of the lungs, several times in the twenty-four hours, is a tangible reality, and a new departure in thoracic therapeutics. The entire structure of the lung is certainly reached; both the healthy and the morbid tissues are thoroughly searched out and permeated."

Bergeon has communicated his views to the Paris Académie de Médecine, and his method has been tried "with unexpectedly favorable results" in the hospitals of Paris, and at Lyons.

The injections are made twice daily. At first only about one litre of gas is used; and this amount is steadily increased. Great attention to details is needed; the sulphur must be pure, and no atmospheric air must be admitted.

Dr. Bergeon's method is novel, and with so many strong endorsements it plainly deserves an extended trial. It is not one that can be widely used at present, owing to the care and time needed for its application.

SHOULD PREACHERS PAY?

UNDER the above heading, Dr. George R. West, in the *Atlanta Medical and Surgical Journal*, makes a vigorous protest against the custom of not charging any fee for professional services rendered to a minister of the Gospel or his family.

The arguments put forward are in the main sensible and sound, although the picture is not quite so dark as Dr. West paints it. He believes that, in the interests both of the clergyman and the physician, the custom should be abolished. By it the clergyman is put at a disadvantage, because he cannot always have his choice of medical attendants, but must take one out of his flock. Then, since he makes no payments in money, he must feel a delicacy in calling upon the physician to the extent which he would often, perhaps, desire.

According to Dr. West, if a clergyman sends for his physician "at an opportune time, or happens in his office when he is idle, he will receive prompt attention with great courtesy. If, however, he sends when that physician is tired, or if the weather happens to be disagreeable—it being cold, wet, or in the night-time—the physician will stay at home, when he finds who wants him. If it had not been for that abominable custom which would prevent him from charging for his services, he would have rendered them."

We can hardly believe that such things as this often happen. No honorable physician would do his duty any the less thoroughly because he received no money equivalent. If medical services can never be conscientiously dispensed except on a commercial basis, then medicine is only a trade, after all, and its dignity is gone.

Dr. West goes on to say: "Under the existing customs, if a preacher or his family is being attended by a doctor in whom they lose confidence, it is a very awkward thing to demand that the doctor cease his gratuitous visits, and then call in another. If it was a money transaction, it could be accomplished in a business way."

He also states that it is not for the interest of the physician to treat the minister without compensation, although the reasons put forth are hardly so convincing.

Perhaps it is a fact that preachers do, as a rule, pay more, indirectly, than other people for their medical services. In our opinion, the custom does its greatest harm to the clergy; and it is with them that reform ought to originate.

THE EARLY HISTORY OF INTUBATION OF THE LARYNX.

INTUBATION of the larynx was suggested thirty years ago, but it is still generally believed to be an American idea, and, if we mistake not, it was independently conceived by Dr. O'Dwyer, of this city. Its early history, however, is almost a tragic one, and is worth recalling.

On September 14, 1855, M. Bouchut, then a young hospital physician and professor-agregé, described a method of treating laryngeal stenosis by intubation, thus avoiding tracheotomy. A commission was appointed to investigate the subject, and Trousseau was made its secretary. He read his report two weeks later, and presented the following conclusions:

"Tubage" of the larynx in certain cases of acute laryngitis can by retarding asphyxia prove of curative value.

In certain chronic diseases of the larynx it will allow one to delay tracheotomy, and sometimes relieve or cure the patient.

In the treatment of croup it delays asphyxia, and allows a more easy introduction of air and agents capable of modifying the diphtheritic inflammation.

It can only very rarely supplant tracheotomy, which is the principal means of opposing croup when medical measures fail.

The last conclusion was practically an extinguishment of M. Bouchut's views and method; but it was most actively supported in the discussion which followed, and M. Bouchut was, it is said, most virulently and ungenerously attacked. The discussion finally became so warm that Trousseau went to the tribune; then, in the language of the *Gazette des Hôpitaux*, "it was no longer a discussion, it was an execution!"

M. Bouchut was attacked in his character, and in his honor, and his idea was actually hounded out of existence. The ingenious but unfortunate physician found all the official avenues to promotion barred against him. His career was in fact almost ruined. By force of character and perseverance, however, M. Bouchut has won a name in pædiatrics, and it must be a matter of no small satisfaction to see his idea now revived and warmly indorsed by many excellent authorities.

A WORD OR TWO ON WARM CLOTHING.

AT a time when there is "a nipping and an eager air" the question how to keep warm presents itself in many urgent phases. In the matter of properly clothing the body, or, in other words, of conserving animal heat, the physician is consulted as much as upon any point within the range of hygienic requirements.

There is no doubt that wool stands at the head of the materials out of which clothing is made. Its virtues depend upon its being a poor conductor of heat; its porosity, allowing the passage of the exhalations from the skin; its power of absorbing moisture and giving it up slowly and gradually.

As a non-conductor of heat woollen materials have been shown by exact experiments to rank first, although with them must be placed certain furs and the down of birds. After these come silk and cotton, while linen ranks last.

The porosity of flannel as compared with that of other materials has also been determined by experiments showing the pressure required to force air through them. Flannel is nearly twice as porous as linen, more than twice as porous as silk, and seventy times as porous as glove-leather. Both flannel and silk take up water slowly and give it up again slowly. Owing to the openness of the texture, and the hydroscopic power of the fibre, a considerable amount of water can be held in its meshes; more than twice as much, in fact, as can be taken up by cotton or linen. The slow evaporation of water from flannel as compared with linen is well known and often observed. Rags of linen, not flannel, dipped in water are used to cool the fevered brow or allay an inflammation. Linen imbibes moisture most quickly, cotton next, and wool last.

Woollen clothing is universally used by athletes during exercise. This is a good plan if, as is the rule, thin flannel is used. In very hot weather linen or cotton, however, is better during the exercise. After exercise the body continues to perspire, and the perspiration, becoming vaporized, cools and may chill the surface. If dry flannel is now put on, however, the vapor is condensed in its meshes, the latent heat restored, and an agreeable feeling of warmth results.

Woollen clothing is not so good as leather and fur for those exposed to cold winds. Our country readers in the North know well the comfort, and even necessity, of buckskin jackets and fur coats.

Woollen clothing promotes the activity of the skin; and it is much revered by the rheumatic, with good reason. Redness in flannel is supposed to give it additional virtues.

Red flannel is generally an irritating material, owing to its coarseness and sometimes to the dye. This more or less peppery quality furnishes the sole basis for its popularity.

The color of a fabric affect its properties as a material for clothing in two ways: the absorption of heat and of odors. Cloths absorb heat and odors in the following order: black stands first, then come blue, red, green, yellow, white.

The wearing of flannel is believed by some to lessen the risks of malaria. That it does do so, except in a very indirect way, is improbable, though Parkes is inclined to give some credence to Andrew Combe's opinion in favor of this view.

Many persons cannot wear pure wool next to the skin, owing to its slightly irritating properties. For these, silk is perhaps a tolerably good, though a most expensive, substitute. A combination of cotton with the wool can be all but too easily found, which sensitive skins can easily endure.

DISPENSARIES AND OUT-PATIENT DEPARTMENTS.

AT the time when every new hospital begins to feel that it must have an out-patient department for the benefit of the sick poor and its annual report, the experiences recently furnished in London may be studied with profit. At a meeting held under the presidency of Sir Andrew Clark, to discuss the question of provident medical associations and the treatment of the sick poor, some very vigorous attacks were made upon the out-patient depart-

ments. Mr. Timothy Holmes said that it was in great measure to the abuse of these so-called charities that the provident dispensary system had failed to meet expectations.

A resolution was passed "that the attention of the governing bodies of hospitals, and other public authorities, be called to the necessity for some check on the indiscriminate provision of medical treatment at hospitals and dispensaries."

A second resolution was adopted, to the effect "that in the opinion of this meeting the future medical attendance on the poorer classes ought to be conducted on the principle of sick assurance."

DEMOCRACY AS A CAUSE OF FINANCIAL DEPRESSION AMONG PHYSICIANS.

In a series of seven articles, published in *The Provincial Medical Journal*, upon the causes of low fees, much stress is laid upon the fact that of late years persons from the very lowest strata of society had in increasing numbers entered the profession. This class was, as a universal rule, poor; starting in practice they were obliged from the beginning to earn enough to live on. The consequence was low fees. It is part of the glory of our country that persons of the humblest class have here the right and opportunity to rise to the highest positions.

But we can also recognize that this prevailing desire to rise often springs from discontent and laziness rather than honest ambition, and often leads to placing persons in positions which they signally fail to fill.

The ranks of the profession in this country are remarkably full of persons who started from the very bottom educationally, socially, and financially. It is greatly to the credit of the American character that it shows such power of cultivation and development, and that the American physician illustrates this better almost than any other class. There is a tremendous developing and educating power in medical work.

At the same time, our profession shows plainly to what an extent it is recruited from the very poor; and we can trace to this fact, especially in cities, much of the very small-fee system, and the consequent hard work and financial straits of the physician.

COUNT TOLSTOI ON PHYSICIANS.

Count Tolstoi may be a great novelist and a remarkable thinker, but if he never thought anything more original than the following, which is going the rounds of an admiring press, he should give up an unfruitful habit of systematic ratiocination. He says:

"This is where the strength of the physician lies, be he a quack, a homœopath, or an allopath. He supplies the perennial demand for comfort, the craving for sympathy that every human sufferer feels, and of which the germs exist in the child. See a baby that has given itself a blow; it runs to its mother or its nurse to be kissed and have 'the place' rubbed; and it actually suffers less for the pity and caress. Why? Because it feels that they are bigger and wiser than itself, and have it in their power to help it. So the doctors were of a certain use to Natacha when they assured her that she would be better after taking the pills and the powders from the shop in the Arbatskaia, which were put up in a neat little box, costing one ruble and seventy kopecks, and were to be dissolved in boiling water, and taken every two hours."

We do not know what was the matter with Natacha, but if it was constipation, or a real hard stomach-ache, for example, we would put blue pills and paregoric against a sense of the personal bigness of the doctor every time.

"Such gentle physic given in time had cured her" much more quickly than the most expansive sympathy. We are not disputing that there is much truth in Tolstoi's remarks, but so far as this is the case they are exceedingly trite and commonplace. It is just eighteen hundred years since Patronius Arbiter remarked:

"*Medicus nihil aliud est quam animi consolatio*" ("The doctor is nothing but a consoler of the mind"), which is exactly the point made, with much diffuseness, by the Russian count. Certainly his quoted passage, though having a fine literary quality, must be classed as a true *castana vesca*, and should only be quoted hereafter with this proper explanation of its ripe antiquity.

THE RELATION OF MUSCULAR ACTION TO ANIMAL HEAT.

This problem has always been one of the most interesting ones of physiology. It was long ago definitely settled that muscular action, with its attendant metabolic changes, was the great source of bodily heat. When a muscle contracts there is, to use the modern phrase, a decomposition of the explosive contractile substance. Part of the liberated energy is manifested as muscular movement, and the rest is changed into heat. The blood returning from the seat of activity is darker than that supplied thereto. It has become laden with carbon dioxide gas, which is one form of ash of the combustive process for which oxygen is the fuel.

Some interesting experiments on this point have recently been reported by M. Quinquad to the Biological Society of Paris. The muscles of a dog's leg were made to contract twice a second by means of an induced electric current of known strength. The contractions were kept up over a period of three-quarters of an hour. After the first five or six minutes the temperature of the animal invariably rose, the rapidity of increase varying in different species. Respiration was increased from twenty-two to over one hundred per minute, and became somewhat irregular. This irregularity continued after the passage of the current had ceased.

In the first experiment the rectal temperature before the stimulation was 102.6° F. The current was allowed to pass in all thirty-five minutes. After twenty minutes the temperature had risen to 105.8° F. Respiration was increased, and the animal panted as if he had been running a long distance. After fifteen minutes more the current was stopped, but the panting still continued. Two hours after the commencement of the experiment the animal died, with a temperature of 107.6° F. Another fact noted was the diminution in glucose in the blood from the side stimulated over that in the blood from the other side. In the former it was .70 gm., and in the

latter 1.20 gm. This is not, however, a new physiological observation.

The general conclusions which can be drawn from M Quinquad's observations are these: First, that local muscular action brought about by electrization can induce a general hyperpyrexia which may verge on danger; second, that in death resulting from electrization the overproduction of heat may be one element of fatality; and, thirdly, that after exposure to cold, with its attendant depression, the application of electricity is a means of restoring heat to the system by causing its internal production. We think that this last remark needs limitations. If a patient is in a state of great exhaustion from prolonged exposure it is doubtful whether the advantages of this method of treatment would counterbalance its disadvantages. However, it is a therapeutic procedure worth remembering.

MEASLES AND DIPHTHERIA IN NEW YORK CITY.

The epidemic of measles, and the somewhat unusual prevalence of diphtheria, in this city have frightened many nervous people to a quite unnecessary extent. The impression has been created that both measles and diphtheria are malignant. This idea, however, is an erroneous one, as the reports of the Board of Health show. The ratio of deaths in cases of measles is about the same as is usually reported. The same is true of diphtheria, of which the number of cases reported weekly is only in slight excess of what it was a year ago. Besides this, in the last two weeks the number of cases, both of measles and of diphtheria, has been decreasing. In the four weeks of December, 1885, there were 355 cases of diphtheria reported, with 157 deaths; in the corresponding weeks of last year there were 471 cases and 207 deaths, the mortality ratio being thus actually less than a year ago. In the three winter months of 1885–86 there were 134 cases of measles and 12 deaths. In December of 1886 there were reported 1,979 cases of measles and 232 deaths.

The Utility of the Medical Art.—"The best way to ascertain whether the art of medicine is worthy of the respect, the confidence, and the gratitude of mankind," writes Dr. H. W. Boone, in the "Report of the Hospital for Chinese," at Shanghai, "is to compare the present status of the medical sciences in the West with what China has to offer. Here we have a vast nation, numbering nearly one-fourth of the whole population of the habitable globe. She boasts of a civilization older than that of the most ancient nation of the West. She has a gigantic body of literature, her traditions extend to the dawn of the human race. What do we see? Her medical practitioners are steeped in ignorance and superstition; they know nothing of any one of the exact sciences; they have no accurate methods of diagnosis, and the remedies in use among them are puerile. Of surgery, they have none. The enormous mass of preventable or curable disease, of suffering, of agony, and death endured by this countless multitude every day and every year is the most powerful witness in the world to the utterly incalculable and overwhelming power for good that modern medicine and surgery have to offer."

News of the Week.

New York Pathological Society.—At the anniversary meeting held January 12, 1887, the following were elected officers for the ensuing year: T. Mitchell Prudden, President; W. P. Northrup, Vice-President; John H. Hinton, Treasurer; Wesley M. Carpenter, Secretary; John C. Peters, Editor; Drs. W. Mendelson, J. C. Peters, H. Marion Sims, L. E. Holt and W. H. Porter, Committee on Admission and Ethics; Drs. G. C. Freeborn and W. P. Northrup members of the Committee on Publication.

Dr. William Perry, of Exeter, N. H., died on January 11th in the ninety-eighth year of his age. He was the oldest graduate from Harvard College, having graduated in 1811, and was the sole survivor of the passengers on Fulton's first steamboat ride on the Hudson, eighty years ago.

Rheumatism, Rank, and Rotundity.—It has been suggested that rheumatism is the pathological appendage to American greatness. President Cleveland has it, Blaine has it, and Logan had it.

Dr. James E. Kelly, a Dublin physician of some political prominence, now on a visit to this city, was tendered a public dinner last Monday, by some of his political friends.

Pasteur's Latest and Worst Failure has just occurred, according to recent despatches. The patient, whose finger was nearly bitten off, was taken promptly to the Rue Vauquelin. At the end of twelve days, hydrophobia was manifest, ending under conditions to convince Professor Peters, who kindly reports the failure at once to his colleagues of the Académie de Médecine, that the malady was due to the operation.

Infectiousness of Tetanus.—Dr. Wing, a veterinary surgeon, treated a horse which died of lock-jaw. He unfortunately scratched his hand at the post-mortem. Tetanus developed, and he died of the disease. The *American Veterinary Review* thinks that the case was an illustration of Verneuil's view that equine tetanus may be conveyed to man.

Rough on Fevers.—This is the popular name suggested for antipyrin, antifebrin, and thallin.

Notes from St. Louis.—Dr. F. W. Wisseler, an old and well-known practitioner, failed to report a case of diphtheria, and has been proceeded against by the board of health.

A Blind Physician, Dr. Robertson, has been elected by the Conservatives to fill the vacancy in the Brighton (England) district. He had no opposition.

The Southwestern Medical Gazette is the title of a new medical monthly, published at Louisville, Ky., and edited by Dr. M. F. Coomes and Dr. J. B. Martin, with a long list of eminent collaborators. The *Gazette* shows evidence of good journalistic experience.

Dr. Fordyce Barker has been elected President of the Medical Board of the Woman's Hospital of the State of New York, in this city.

THE USELESS DISPENSARY.—Many of the friends of the Presbyterian Hospital consider the building of the new dispensary a useless bit of extravagance, and are withholding their subscriptions accordingly.

GOUT BROUGHT ON BY STARVATION.—Mr. Jacques, the English fasting-man, has brought his experience to a close on the twentieth day of his fast. Curiously enough, says the *Hospital Gazette*, the eighteenth day of his fast was marked by a typical attack of the gout in one big toe. This is so contrary to the popular notion of the etiology of gout that it was received by the public with a certain amount of incredulity. The attack, however, caused nothing more than a little passing inconvenience, and at the close of the experiment he was in very good health and spirits. He weighed one hundred and sixteen pounds, as against one hundred and thirty-eight pounds at the beginning, and had thus lost twenty-two pounds in about the same number of days.

DOES THE PRESCRIPTION BELONG TO THE PATIENT?—In answer to this question, as asked by a correspondent, we say: The prescription is the property of the patient, on the principle that what he pays for is his.

NO PATENT MEDICINES FOR RUSSIANS.—The Russian government has decided to prohibit the importation of patent medicines; the published list of prohibited articles contains eight hundred items.

TOYS FOR HOSPITALS.—Seven years ago, the editor of *Truth* started an exhibition of toys, made by its readers, for distribution among the hospitals. At the last exhibition, over fifteen thousand toys were sent in for exhibition and distribution. The idea is a good one, and might well be carried out in this city, in connection with some of our charitable organizations. There are six or seven hospitals which treat or care for children exclusively, besides eight or more hospitals which have children's wards.

ANOTHER MEDICAL CENTENARIAN.—According to Spanish journals, there is at present in Logroño a medical man, Don Rosendo Recondo, still in considerable practice, and in the enjoyment of good health, who, if he lives till next February, will be one hundred years of age.

STATES' RIGHTS AND HOSPITAL INTERNES.—A most extraordinary restriction has been established by the Legislature of Louisiana, according to *The Southwestern Medical Gazette*. The eminent body of local patriots in question voted $90,000 to Charity Hospital, "provided that only Louisianians should be permitted to compete for positions on the staff of the hospital!"

ELECTROLYSIS IN MEMBRANOUS LARYNGITIS.—Dr. F. E. Waxham, of Chicago, reports a case of membranous croup with very severe symptoms of laryngeal stenosis. An intubation tube was introduced, and made the negative electrode by connecting it with a platinum wire. A current of eight cells was passed. The symptoms improved, and the child recovered.

AN EXPENSIVE MEDICAL ATTENDANT.—The New York correspondent of a Philadelphia paper tells the interesting story of a very wealthy lady of this city, well known in society, who is suffering from Bright's disease. She has engaged a medical man, who is most known, however, as a surgeon and a poet, to visit her twice daily for $50,000 a year. Doubtless, a person could be hired to have Bright's disease himself for that sum.

DENTAL ANÆSTHESIA.—M. Georges Vian claims to have solved the problem of local anæsthesia in dentistry. After numerous trials of solutions of different strengths he has found that the soft parts about the maxillæ may be rendered completely insensible by the use of cocaine, associated with a two per cent. solution of carbolic acid. Five minutes before operating M. Vian dissolves five centigrammes (one grain) of hydrochlorate of cocaine in fifty centigrammes (ten drops) of the solution, and injects it into the gums, half-way between the neck and the extremity of the root of the tooth. Half of the solution is injected on the palatine and the remainder on the labial side, pressure being made by the finger, when the needle is withdrawn, to prevent the exit of the fluid. Anæsthesia is perfect in three minutes. The quantity of cocaine advised by M. Vian seems somewhat large, but it is said to have been so used in eighty-seven cases without causing any unpleasant symptoms."—*Paris Correspondent of Lancet.*

A RARE FORM OF FRACTURE.—At a meeting of the Academy of Medicine of Ireland, recently, Mr. E. H. Bennett exhibited a cast and specimens of a rather rare accident, viz., simultaneous fracture of both clavicles. There are only about eighteen examples known, and in eight cases only did union take place.

HOSPITAL SUPERINTENDENTS RESIGNING.—Dr. W. N. Wishard has recently resigned his post of hospital superintendent of the Indianapolis City Hospital. Dr. A. J. Willard has recently resigned the superintendency of the Mary Fletcher Hospital, at Burlington.

IN BOSTON they do not say stomach-ache, but "gastric neuralgia." But it gets there all the same.—*Life.*

THE SAN DIEGO COUNTY MEDICAL SOCIETY is the title of a new medical society recently organized in San Diego, Cal. All regular physicians residing within the county, and practising according to the recognized ethics of the profession, were cordially invited to unite with the society.

HYDATID CYST IN THE SCROTUM.—Dr. Philip E. Musket, of Sydney, New South Wales, sends us an account of a case in which a hydatid cyst was found in the scrotum. It formed a tumor about the size of a large emu egg. Dr. Musket believes this to be the first recorded case of a scrotal cyst from this cause. He adds: As to unique situations for hydatid disease in my own experience, I have found, after death, in Douglas' pouch a cyst the size of an orange in a young girl who died of cardiac trouble. Had opportunity permitted an examination during life, it would doubtless have given rise to some difficulty in diagnosis. I have also been present at an autopsy where a cyst was met with in the pericardial sac. While house surgeon at the Sydney Hospital I saw a cyst, the size of a hen's egg, situated over the left deltoid muscle, which was taken to be an ordinary fatty tumor till it was exposed by the scalpel.

Reports of Societies.

NEW YORK ACADEMY OF MEDICINE.

Annual Meeting, January 6, 1887.

ABRAHAM JACOBI, M.D., PRESIDENT, IN THE CHAIR.

THE ANNUAL REPORTS

showed an increase of the General Permanent Fund, of the Library Fund, and of the Building Fund, besides creation of the Krackowizer Prize Fund, during the last year; also a notable prosperity in the library and in the scientific and general interests of the Academy.

OFFICERS FOR THE ENSUING TERMS

were elected as follows: *President*, Abraham Jacobi, M.D.; *Vice-President*, William H. Draper, M.D.; *Trustee*, Everett Herrick, M.D.; *Member of Committee on Admissions*, Henry E. Crampton, M.D.; *Member of Committee on Library*, F. P. Kinnicutt, M.D.

DR. L. EMMETT HOLT read a paper on

THE ANTISEPTIC TREATMENT OF SUMMER DIARRHŒA.

The speaker stated that he did not undervalue other methods of treatment than the use of drugs, such as careful feeding, change of air, etc., but the object of the paper was to discuss what additional measures were useful.

All the causes of summer diarrhœa—excessive heat, improper or artificial feeding, and bad hygienic surroundings—united to produce a dyspeptic condition, which was really at the bottom of nearly all of these cases. The age showed it could not be heat alone, for the disease was not frequent at the most tender age—under six months. Of 431 cases, only twelve per cent. were under six months, while fifty-nine per cent. were between six months and two years. The explanation was that under six months most of the children were fed at the breast. Improper and artificial feeding was quite as important as heat, as Hope had found in 591 fatal cases that only 28 had no food but the breast.

Heat depressed vital energy, increased decomposition in the streets and sewers, and thus vitiated the atmosphere; but, most of all, it produced in the food given to young children putrefactive changes before it was taken into the stomach.

This was especially likely to occur with milk. One instance was cited of every one of twenty-three healthy children being taken in one day with diarrhœa from bad milk.

Closely related to this subject were the poisons produced from food, or ptomaines. Brunton had stated that most of the alkaloids produced from the decomposition of albumen caused diarrhœa. It was believed that many of the nervous symptoms in summer diarrhœa had their explanation in the effects of these alkaloids. This was true especially where the discharges were abruptly arrested, either spontaneously or by opium. They were to be looked upon as a form of toxæmia.

The inflammatory changes found in the intestine were to be looked upon as a consequence of the diarrhœa rather than the cause of it. The most marked lesions were always found in the cæcum and sigmoid flexure, just where the irritating substances were longest detained in their passage.

Immense numbers of bacteria were found in the discharges, but no sufficient evidence had yet been adduced to establish the existence of a special microbe as a causative agent.

The indications for treatment were four: 1. To clear out the bowels. 2. To stop decomposition. 3. To restore healthy action in the alimentary tract. 4. To treat the consequential lesions.

It was proper to begin with a cathartic in all cases unless the stomach was very irritable. Castor-oil was by far the best. If much vomiting were present, a copious injection of water, enough to wash out the colon, should be given.

Many mild cases could be cured by the oil alone, provided suitable dietetic regulations afterward could be carried out. In severe ones it gave only temporary benefit.

For the second and third indications an antiseptic should be given and the diet carefully regulated. The best antiseptics were sodium salicylate and naphthalin. The former should be given in doses of one to three grains, according to the age of the child, every two hours, and the latter in about double the dose.

If vomiting were present, all food should be stopped for from twelve to twenty-four hours, and thirst quenched by thin barley-gruel or mineral waters—cold, and in small quantities.

Unless the child were upon the breast, in which case it should, of course, be kept there, it was better to *withhold milk entirely*. Wine-whey, animal broths, expressed beef-juice, or even raw beef, could be used and were usually sufficient.

To meet the fourth indication—*i.e.*, to treat the lesions—astringents by the mouth were useless, with the possible exception of bismuth. The diet should be as carefully looked to in chronic cases as in acute. The antiseptic should be continued, to check fermentation and decomposition in the intestine, and the large intestine should be washed out once a day with pure water or a weak antiseptic or astringent solution.

Attention was called to the fact that, except opium, nearly all the drugs which had held their place in the treatment of this disease were antiseptics of more or less power. Bismuth, calomel, the mineral acids, iron and silver salts were cited. Pure antiseptics had been used in the treatment of diarrhœal diseases since 1846. Creosote was first employed, and with great success both in England and in this country. Ten or fifteen years ago salicin was largely used, especially in the South, with uniformly good results, particularly in chronic cases. The use of salicylic acid and its salts, the bichloride of mercury, and naphthalin was also referred to. The last was of latest introduction and seemed likely to prove of very great value, perhaps the most valuable of all.

Notwithstanding the successful results obtained by antiseptics, the great majority of the text-books still advocated the old plan of the use of opium and astringents as fifty years ago. An inquiry into the public practice of this city showed that in fourteen institutions and dispensaries, where it was estimated that twenty-five thousand children were treated yearly for diarrhœal diseases, the main reliance was still upon opium, bismuth, chalk-mixture, and castor-oil.

The speaker had tabulated 300 cases of his own treated by such remedies. Of these, 50 per cent. were cured; 27 per cent. improved; 18 per cent. unimproved; and 7 per cent. died. During the past year he had treated 81 similar cases by an initial dose of castor-oil, followed by salicylate of sodium, these being the only drugs used. Of these, 84 per cent. were cured; 7 per cent. improved; 7 per cent. unimproved; 1.2 per cent. died. Forty-four cases were treated by naphthalin, usually preceded by the oil. Of these, 67 per cent. were cured; 15 per cent. improved; 13 per cent. unimproved; and 2 per cent. died. Resorcin was used in a similar manner in 27 cases. Of these, 55 per cent. were cured; 22 per cent. improved; 22 per cent. unimproved; and none died.

The duration of the disease in these cases before treatment was about the same in each class. The duration of treatment in the cured cases was much shorter by sodium salicylate than by the use of opium, astringents, etc. In cases of long standing the very great superiority of the salicylate and naphthalin was clearly shown. Resorcin was much inferior to the drugs just mentioned.

The following conclusions were drawn from the paper:

First.—Summer diarrhœa is not to be regarded as a disease depending upon a single morbific agent.

Second.—The remote causes are many—heat, improper and artificial feeding, bad hygiene, etc.

Third.—The immediate cause is the putrefactive changes which take place in the stomach and bowels in food not digested, which changes often are begun outside the body.

Fourth.—These products may act as systemic poisons, or the particles may cause local irritation and inflammation of the intestine.

Fifth.—The routine use of opium and astringents is not only useless, but, especially at the outset, may do positive harm; since, by checking peristalsis, opium stops elimination and increases decomposition.

Sixth.—Evacuants are to be considered an essential part of the antiseptic treatment.

Seventh.—The salts of salicylic acid and naphthalin are the antiseptics which, thus far, seem to be best adapted to the treatment of diarrhœal diseases.

Dr. R. W. Wilcox spoke especially with reference to the use of naphthalin in diarrhœa in adults. Since reading Rossbach's paper in the *Berliner Klinische Wochenschrift*, in November, 1884, he had used naphthalin in thirty-two cases, nearly all being in adults. He had come to feel as much confidence in the use of this drug, under certain circumstances, as in the use of mercury or the iodides in syphilis or of quinine in intermittent fever. As mercury and quinine may fail to accomplish their work if used without observance of a few well-known precautions, so naphthalin may fail if improperly employed. The most frequent cause of failure has been the use of too small quantities, less than sixty grains daily being a needless waste of a very good medicine. He had given up to one hundred and twenty grains during the twenty-four hours in divided doses, usually in starch capsules with a small quantity of oil of bergamot to conceal the somewhat unpleasant odor. If the impurities of the drug are removed by washing with alcohol, no such untoward effects as have been occasionally reported in the journals will occur. Frequently during its administration the urine will assume a smoky color, resembling that of acute nephritis, but a careful examination will fail to detect either albumen or casts.

In chronic diarrhœas he had used naphthalin as the only drug in twenty-one cases. Nearly all degrees and varieties had been represented; some could be traced back to an acute process, others were the result of improper food or followed debilitating diseases.

He related one case: James D——, messenger, eighteen years of age, came to him, complaining of a diarrhœa of over two years' duration. Its commencement was in the second summer previous to his first visit. The assigned cause was overindulgence in unripe or spoiled fruit. The trouble had continued through the following winter, with intervals of cessation, and had been aggravated the following summer. Since summer his loss of flesh, previously considerable, had increased, his tongue was heavily coated, the appetite poor; his discharges were five to six daily, unformed, varying much in amount, sometimes watery, very foul-smelling, much gas, no tenesmus, no blood; pain at times, but no fever. Although he was in a deplorable condition, and so long as his work remained severe and his food unsuitable recovery seemed impossible, by the use of sixty grains of naphthalin daily the number of movements were reduced, within a week, to two daily, and, for the first time, became formed and devoid of odor. About six months afterward he reported that after three weeks he had discontinued his medicine, having had no further necessity for using it.

In *chronic dysentery* he had used naphthalin in seven cases, with excellent results. The most interesting case was that of James C——, sixty-six years of age, who contracted dysentery while serving in the Federal army in 1862–64. He had never been free from the disease except for a few weeks at intervals. He could remember no day during which he had not had more than one passage. He was emaciated, with sallow, dirty skin, marked tenesmus, abdomen painful on pressure, red tongue, pulse very feeble, no appetite. His stools averaged seven movements daily—slimy, blood-stained, of extremely foul odor. This man had ninety grains of napthalin daily, and at the end of a month he would have hardly been recognized as the same man. Four months after he reported himself so much improved that he considered himself a well man.

His experience in the diarrhœa of *typhoid fever* had been limited to two cases: Charles B——, 25 years of age, and John F——, 16 years of age, both of whom he saw for the first time in the third week, the diagnosis being thoroughly established. In both there was commencing tympanites; diarrhœa, to the extent of six to ten passages in the twenty-four hours. Naphthalin was administered up to sixty and ninety grains in the day, with the result of "stiffening up" the motions and reducing them to two daily. The odor of the stools, in both cases, was lost. In fact, he felt so confident that the intestinal canal and, consequently, the fæces were disinfected that he did not take any other precautions. He also directed attention to the antipyretic effect of this drug. In general, the use of antipyretics in typhoid fever he considers unsafe; but if the practitioner was thoroughly imbued with the idea that he must use an antipyretic, let him use naphthalin, which reduces temperature, indirectly, by disinfection of the intestine. Its safety compared favorably with that of antifebrin, thallin, antipyrin, etc. Whether typhoid fever had ever been absorbed by this or any other drug he did not pretend to say; but if it could be accomplished, in his opinion, naphthalin, by its vigorous action upon the contents of the alimentary canal, should tend to that result.

Of the use of naphthalin in acute intestinal catarrhs, and in the diarrhœas of children, he had had no experience. In the diarrhœa of chronic tuberculosis he had had no opportunities for experiment. In all his cases of diarrhœa evidences of tuberculosis in other organs were sought for, but were not found. He would emphasize the claims of naphthalin as *the* drug to use in all cases in which it was necessary to disinfect the alimentary canal, as in typhoid fever, intestinal catarrhs, and dysentery, because it seems to be, of all the drugs at our disposal, the most certain, and at the same time the one most free from danger.

Dr. Andrew H. Smith thought that the best method of treatment, in the cases considered by Dr. Holt, was by the administration of antiseptics. He believed that the success that attended the use of many domestic remedies depended upon their antiseptic properties, such as the different mints, etc. So far as his experience went, it was in exact accord with the views advanced by the author of the paper.

Dr. John C. Peters believed that he was among the first to call summer diarrhœa a hot-filth disease, and he regarded Dr. Holt's views concerning the use of antiseptics as correct. Bacteria will live in tincture of opium and in calomel, but are killed by acids, and the mints are among the best remedies at our disposal.

Dr. Van Santvoord had had considerable experience in the treatment of summer diarrhœa occurring in children in Randall's Island Hospital, and it coincided with Dr. Holt's. This diarrhœa should be considered as primarily an indigestion, and the subsequent changes depend upon fermentative processes, and the indications seem to be plain. With regard to the use of opium, he restricted it to the cases in which the passages were watery and frequent, and he gave it hypodermically in the form of a solution of morphine guarded by atropia; about $\frac{1}{180}$ of a grain of sulphate of atropia to five minims of United States Pharmacopœia solution of morphia (gr. j. to $\bar{3}$ j. of water). Bismuth he regarded as an antiseptic, and had been accustomed to give a dose of it after each feeding. He had a general impression favorable to flushing the entire colon with an astringent solution containing an alkali. He thought that the addition of

a small quantity of salt to an astringent injection would contribute toward its reaching a larger surface than it would otherwise do.

THE PRESIDENT remarked concerning bismuth that he regarded it as an antifermentative, a view that he had held for many years. Dr. Holt had only incidentally mentioned dietetic treatment, but at the same time had been emphatic in what he had said, and with him the President agreed. Milk should be avoided. It was impossible, in his opinion, to relieve a severe attack of summer diarrhœa without stopping the feeding of milk for a few days, perhaps a week or more. Raw white of egg mixed with barley-water had served him best as a substitute. Raw beef should be avoided because of its liability to give to the child a tape-worm, and the beef tape-worm was the most difficult to remove. He had seen a few cases of diarrhœa in adults in which naphthalin did some good for some time and very speedily.

DR. GEO. L. PEABODY had come to look upon naphthalin as a very valuable addition to our means for treating a variety of intestinal complaints. Since the publication of Rossbach's paper he had been using it in the early cases of typhoid fever in the New York Hospital. He was very confident that he had seen several cases aborted by the use of naphthalin, given in quantity varying from sixty to eighty grains in twenty-four hours. He then gave, briefly, the history of two cases in which the patients, with well-marked symptoms of typhoid fever, were convalescent within fourteen days.

DR. CARPENTER referred to the antiseptic treatment of diarrhœa in adults—dysenteric cases from the army, tuberculous cases, etc.—by the administration of a domestic remedy—an acid in the form of what is commonly known as "old cider" or "hard cider," a glassful three times a day, and by the use of salicin, a remedy that had been employed many years for this purpose.

DR. JOHN C. PETERS said that it was important to use pure water, and that distilled water would cure a great many cases of dyspepsia and diarrhœa without the aid of any other treatment.

DR. HOLT, in closing the discussion, remarked that Dr. Caldwell had used salicylic acid in the treatment of the diarrhœa of phthisis, with results far superior to those that had been obtained by the use of opium or astringents.

With regard to irrigation of the bowel, he regarded it as a very valuable accessory to the antiseptic method.

Dr. T. R. Varick's resignation was accepted, and on motion he was made a non-resident Fellow.

The Academy then adjourned.

INHALATIONS OF ETHER IN NON-EXPANSION OF THE LUNGS.—Dr. John H. Jones (*New York Med. Journal*, August 21, 1886) recommends *the inhalation of ether in non-expansion of lung* due to adhesions of pleural surfaces, occurring after pleurisy with purulent effusion, in aponeurosis of children, and asphyxia neonatorum. After absorption or artificial evacuation we frequently find that a long-continued effusion in the pleural sac is followed by destructive changes in the corresponding lung. Many remedies have been tried with the object of expanding the air-vesicles and preventing the occurrence of carnification, but with unfavorable results. The most effectual treatment heretofore has been that of breathing compressed or rarefied air. But by far the best method in Dr. Jones' experience is inhalation of ether. He has used it on three patients with very flattering results, and can confidently recommend it to the profession as the best means of dilating the air-vesicles and restoring the lung to its natural state. If the adhesions have not been of too long standing, and are not very dense in structure, they will certainly yield, and, once overcome, will be permanently obliterated. The inhalation should be pushed to complete narcosis. The inhalation of ether is also recommended in the asphyxia of the new-born.

Correspondence.

OUR LONDON LETTER.

(From our Special Correspondent.)

THE OPERATIVE TREATMENT OF POPLITEAL ANEURISM—THE CAMPBELL DIVORCE CASE—MEDICAL LIBRARIES—THE HOSPITAL SUNDAY FUND AND THE FINANCIAL POSITION OF OUR HOSPITALS—THE BROWN LECTURES—EPILEPSY AND ITS METHOD OF PRODUCTION—SOME RECENT DEATHS—THE SOCIETY OF APOTHECARIES—CHRISTMAS AT THE HOSPITALS—TOYS FOR HOSPITAL CHILDREN.

LONDON, December 21, 1886.

A GREAT change in the operative treatment of popliteal aneurism seems indicated by a short discussion on the subject at a recent society meeting (Medical and Chirurgical Society). In a paper by Mr. Savory, on the effect upon the femoral artery of its ligature for the cure of popliteal aneurism, an analysis of twenty-six museum specimens was given. Seventeen of these were complete, and of these seventeen the artery was pervious throughout in thirteen cases, being closed only in four cases, and even in these the closure was only partial. Fifteen out of the seventeen were cured. In these the artery was pervious in eleven and partially closed in four. In two the operation had failed to cure, and the artery remained pervious in both. Mr. Savory gave details of two cases of his own. In one the femoral artery was tied in Scarpa's triangle. There was a slight return of pulsation on the third day. A year later the aneurism had returned. Rest and elastic bandages having been tried without benefit, the popliteal artery was tied in the upper part of the popliteal space and the operation was completely successful. In another case the artery was tied first in Scarpa's triangle, then in Hunter's canal, and finally in the upper part of the popliteal space. Mr. Savory said he should in future be disposed to adopt the latter operation in preference to ligature of the femoral. Mr. Hulke, Mr. John Wood, and Mr. Thomas Smith all concurred with Mr. Savory in this view, and their utterances will doubtless receive due consideration from British surgeons, representing as they do the opinions and practice at three metropolitan hospitals. Mr. Ballance remarked that in his experiments on the ligature of large arteries in their continuity in animals he had never found the artery obliterated for any distance beyond the ligature.

After a trial occupying eighteen days, and with adjournments spreading over a month, the Campbell divorce case terminated at a late hour last night. Into the general features of the case I will not enter. Suffice it to say that, on the one hand, Lord Colin Campbell (a younger son of the Duke of Argyll, and therefore a brother-in-law of the Princess Louise) sought a divorce from his wife on the ground of adultery with four co-respondents. These were respectively the Duke of Marlborough (who has been divorced by his own wife), a distinguished army officer (General Butler), Captain Shaw (of the Metropolitan Fire Brigade), and Mr. Tom Bird (a member of the medical profession). Lady Campbell brought a countercharge of adultery against her husband, and as by the English law adultery alone is not a sufficient plea when the wife is the petitioner, cruelty was also put forward on the ground of a verdict in a previous trial, in which the wife had (on that plea) obtained a judicial separation. I will not pollute your columns with the shameful particulars of the case, but there are a few points of medical interest. One is that the cruelty of which the wife complained, and on the ground of which she had obtained a judicial separation, consisted in the fact that her husband had imparted to her a venereal disease (gonorrhœa), which had produced a severe illness—endometritis and pelvic cellulitis ensuing. After infect-

ing her he persisted in continuing cohabitation, and, on her refusal, said he would leave her. She then said she must make clear the reason, and brought the suit for a judicial separation. I believe it is the first case on record of a judicial separation being granted for the special kind of cruelty in question, though most medical men could furnish examples of its perpetration. The verdict of the lower court was, however, confirmed by the Court of Appeal. Such being the case, the Judge in the present trial repeatedly told the counsel that he must tell the jury they could not go behind the former verdict. Another feature of medical interest was the defence set up by Lord Campbell to the charge of adultery against him. The only piece of evidence brought forward by him was that of two obstetric physicians, who had examined the girl accused and found her *virgo intacta*. This was an unusual defence to a charge of adultery, but one which evidently had great weight in spite of the doubt thrown on the medical evidence in cross-examination. Lord Campbell had the advantage of having among his counsel one (Mr. Finlay) who had been educated as a medical man, afterward leaving it for the law. An unpleasant feature of Mr. Finlay's concluding speech was the tone in which he spoke of Dr. Braxton Hicks, who, he said, had shown himself to be a thorough partisan of Lady Campbell's. I may just note that the result of the trial has been that all the charges have broken down, and that the parties therefore remain just where they were before—viz., judicially separated.

In the matter of medical libraries London is singularly ill-provided. A more or less complete library is, it is true, to be found in connection with each of the medical schools, but none of these even approach completeness in their contents. Their use is also restricted to the alumni and teachers attached to the schools. There are two or three very good medical and scientific subscription libraries at rates of subscription ranging from a guinea a year upward. The only example of a free, large, public library of medical literature is that of the College of Surgeons. This collection includes about forty thousand volumes. But these can only be perused at the library, the rules not allowing books to be taken home. This restriction places would-be readers at a great disadvantage, as Lincoln's Inn Fields, although in the very heart of legal haunts, lying as it does almost under the very shadows of the new Law Courts, is by no means of easy access from most parts of London. To dwellers at the West End, the library of the Royal Medical and Chirurgical Society offers many advantages. It is not free, as the privilege of borrowing books from it is restricted to town members of the society, who each pay three guineas a year and six guineas entrance fee. On the other hand, eight volumes at a time may be taken home for perusal. The library includes nearly as many volumes as that of the College of Surgeons, and as regards modern medical literature, is reputed the best in London. I must not omit to mention the library of the Obstetrical Society, which is a very good one of works on obstetrics. Its use is restricted to members of the Obstetrical Society. The College of Physicians also possesses a library, but it is very inferior to that of the College of Surgeons.

The sum raised this year by the Hospital Sunday Fund is £40,000, being £6,000 more than was raised in 1885. This is cheering, and looks as if hospitals were being more liberally supported by the public. Now for the other side of the medal. Guy's Hospital is one of the three largest metropolitan hospitals, but is richly endowed, its income formerly amounting to upward of forty thousand pounds a year. Thomas Guy, however, directed his trustees to invest the money in land, and the fall in value of land during recent years has taken £15,000 a year from the income of the hospital. Pay patients have been received to eke out the income, but this source of income has not produced sufficient to stop the leak. Being an endowed hospital it has few subscribers. The financial position of the institution is now so bad that it has been determined to make a special effort to raise a fund of £100,000 to keep it open. A public meeting for this object was held yesterday at the Mansion House and subscriptions to the amount of £17,000 announced. Other hospitals also lament the decadence of their funds.

London, December 28, 1886.

In Professor Horsley's recent "Brown Lectures," at the University of London, he has continued the consideration of the subjects taken up by him last year. The subject of epilepsy was discussed at some length in several lectures. Experimental research showed, he said, that epilepsy could originate from discharges in the motor cortex of the brain and from discharges in the bulbo-spinal centres. The disturbance might begin in any part of the encephalon, and, if in the perceptive centres, this would readily explain the affection of intelligence. A detailed account was given of the various investigations made to ascertain the existence of special convulsive centres either in the pons Varolii or in the medulla oblongata. The existence of these was considered as not proved. All the ascertained facts could be harmoniously interpreted otherwise. Professor Horsley said he believed that all the convulsive (tonic and clonic) phenomena could originate from the ordinary bulbo-spinal centres already existent for the purpose of carrying out normal mechanisms. Tonic or clonic spasm could be produced by any motor nerve centre, but the combination and sequence of tonic-clonic could originate only from the cerebral motor cortex. It was an interesting problem whether the clonic spasm of cortical epilepsy was the effect of cortical or bulbo-spinal discharges. The experiments of Nothnagel and Brown-Séquard (in which convulsions were set up by direct and reflex irritation respectively of the nerve-centres) were described and criticised. Dr. Hughlings Jackson's views of the representation of movements in the hemispheres were then considered and combated. Dr. Jackson had maintained that each hemisphere represented both sides of the body, and according to this theoretical view it would be possible to evoke convulsions of the whole of the body by stimulating one motor centre. But however probable these views might be theoretically they obtained no support from clinical or experimental evidence, which simply showed that one-half of the body was represented in the opposite hemisphere with but few exceptions. Professor Horsley then gave in detail certain experimental and clinical evidence which seemed to show conclusively that, as a rule, each hemisphere convulsed its own (the opposite) side of the body. In hemiplegia, if the motor cortex were completely cut off, the limbs remained permanently paralyzed. Then, again, in unilateral fits there was no necessary spread to the opposite side of the body. In one monkey with unilateral cortical fits induced by electricity, the muscles of the back and belly were convulsed only on the one side, showing that even such muscles as are supposed to act bilaterally, and to be closely united spinally, did not do so in cortical fits. The lecturer considered this a strong argument against Dr. Broadbent's explanation of the escape of certain groups of muscles in hemiplegia. He then gave an account of some experiments performed by himself. The conclusions all round, he said, were very emphatic that convulsions due to cortical discharge were evoked in various groups of muscles by nerve energy proceeding from that centre in each hemisphere which is in relation to each group of muscles, and that in generalized epileptic convulsions both cerebral hemispheres were involved.

Two well-known British—though not English—practitioners have just joined the majority. One of these was Dr. Ebenezer Watson. of Glasgow. He was surgeon to, and lecturer on, Clinical Surgery at the Glasgow Royal Infirmary. He made numerous contributions to medical literature, mainly on laryngeal surgery. The other was Dr. Lyons, of Dublin, formerly M.P. for that city. Dr.

Lyons was well known in Dublin, where he practised for many years as a physician. His published works and papers are numerous. The most important among these were his "Treatise on Fevers," and his "Report on the Pathology of the Diseases of the Army of the East." The latter was based upon his experience as Chief Pathological Commissioner to the army in the Crimea, and was issued as a blue-book by the government. Dr. Lauchlan Aitken has also recently died. Dr. Aitken for many years past has resided at Rome, where he practised as a British physician. Another death worth a passing word is that of Dr. Fergus. For thirty-seven years he occupied the responsible post of medical officer at one of our large public schools—Marlborough College. Dr. Fergus will be remembered as the first resident medical officer ever appointed to a public school, although now there is, I believe, no public school without its medical officer in residence. Since Dr. Fergus' appointment, in 1849, the duties of medical officers of schools have become much more arduous and extensive. With the advances in sanitary science they have been expected to assist in the prevention as well as in the cure of disease. It is not too much to say that many modern improvements in school hygiene are due to the efforts of their medical officers. An Association of Medical Officers of Schools was formed a few years since.

The request of the Apothecaries' Society for affiliation has been refused by the Universities of Oxford, Cambridge, and Manchester (Victoria University), and is still *sub judice* by those of London and Durham. Meanwhile the society have considerably strengthened their position by electing Mr. Brudenell Carter as their representative on the General Medical Council. Mr. Carter is Ophthalmic Surgeon to St. George's Hospital, and an able speaker and writer, having been, indeed, for many years a frequent contributor to the both medical and general press.

Christmas festivities at the hospitals are in full swing, though somewhat sadly marred by the numerous "accident cases" brought to the hospitals as the result of the severe storm two days ago. One of the most remarkable features of hospital Christmases within the last few years has been the distribution of toys on a gigantic scale to the sick children. This was started in 1879 by the editor of *Truth*, who asked his readers to send in toys for the children of the hospitals. This they did to the number of a thousand. This year more than fifteen thousand toys have been sent, nine thousand new sixpences, fourteen thousand crackers, and two thousand pots of jam. The proprietors of Willis Rooms lent their premises free of charge for the gratuitous exhibition of this enormous collection, which has since been dispersed among the sick children of the various hospitals, workhouses, and other institutions in the metropolis, and has, I trust, gladdened the holiday season for many a little sufferer.

OUR PARIS LETTER.

HYPNOTISM—PROFESSOR POTAIN—THE SUCCESSORS OF CORVISART—M. PETER AND THE MICROBISTS—THE THEORIES OF ANTI-PARASITIC TREATMENT.

PARIS, December 24, 1886.

HYPNOTISM, with its terrible consequences, is the order of the day, and is greatly occupying the public mind both in and out of the profession. It has been scientifically established that, by certain procedures, one can develop in some persons a state of artificial somnambulism, analogous to natural somnambulism, and that in this state they lose their will and their personality, become passive instruments in the hands of magnetizers, and are accessible to all sorts of hallucinations and of suggestions. This state is aggravated by the momentary loss of the memory. The subject does not retain the least recollection of what passed during hypnosis, and all cerebral spontaneity disappears to such an extent that the person would fatally execute all the orders that may be given him, their execution, however, not being immediate, and may be delayed several hours, several days, and even several weeks. The great danger that may result from such practices is that the repetition of these performances would provoke hysteria, and subsequently mental aberration, as has been already observed. Owing to the grave disorders that have been officially established, public exhibitions of hypnotism have been interdicted in Germany, Italy, and Austria, and so they ought to be everywhere else. In a moral point of view the practice of hypnotism is not the less to be deprecated, as instances have occurred in which the subjects have become the victims of the most odious attempts without being the least conscious of what had taken place. Moreover, public security would also be in danger if the practice of hypnotism be authorized for other than medical reasons. For instance, a person hypnotized may, without his knowledge, be robbed of all his fortune. He can be made to sign any written document, and it would be almost impossible to discover the fraud. The subject may also be made to receive "suggestions" which would push him to commit all sorts of offences and crimes—robberies, forgeries, incendiarisms, assassinations, poisoning. The hypnotized subjects may thus become the blind and unconscious instruments in the hands of the most dangerous malefactors. These reflections are to be found in a pamphlet just published, under the title of "Les Suggestions Hypnotiques," the author of which, M. Frederic Delacroi, a Judge at the Court of Assizes, at Besançon, from his position would be considered a great authority on the subject.

In taking possession of the Chair of Clinical Medicine of the Charity Hospital, in succession to Professor Hardy, Professor Potain delivered a most interesting discourse on the history of clinical medicine in France. But before broaching the subject he pronounced a very eulogistic compliment to his predecessor, and bore testimony to his reputation as a shrewd observer as well as to his powers of diagnosis and his success as a clinical teacher. The lecturer then took a retrospective view of French clinical medicine, and stated that it originated as a real science in that very hospital where he was then lecturing, La Charité, and was founded by the illustrious Corvisart, whose name is perpetuated not only in history, but also by a tablet in the amphitheatre of this hospital, to which he was attached for many years—from 1788 to 1809. M. Potain defined the term clinique as "the study of medicine at the bedside. It is even the base of medicine; it is the commencement as well as the end. But the teaching of medicine at the bedside of the patient could not be possible without a hospital. This is why clinical history is intimately connected with that of hospitals. Before the creation of these institutions, clinical teaching did not really exist." Many eminent men succeeded Corvisart at the Charity Hospital, and we have only to mention the names of Laënnec, Louis, Piorry, Bouillaud, to have an idea of the superiority of French clinical medicine.

Professor Peter, who succeeded Professor Potain at the Hôpital Necker, as Professor of Clinical Medicine, inaugurated his course by a lecture on "The Clinical Aspect of Contemporary Medical Doctrines." He began with Laënnec and his important discovery of "mediate auscultation." He then referred to the discovery, about the middle of the last century, of "mediate percussion," by Avenbrugger, of Vienna, but its establishment as a means of diagnosis is really due to Corvisart. Laënnec was considerably influenced by the teaching of Corvisart, and to him (Laënnec) must be attributed the credit of having introduced into contemporary medicine the scientific methods employed to this day as means of more precise diagnosis than have existed before. After having gone through the different phases of medicine to the present time, Professor Peter entered into his campaign against

the microbian theory, which is the latest innovation in the etiology of disease. M. Peter, true to his principles, endeavors by every possible means, and on every occasion that presents itself, to prove the falsity of the position taken up by microbists, not that he would ignore the existence of parasitic diseases, which, fortunately, are few in number, and are well known even without the aid of the microscope; but what he does emphatically deny is the rôle of the microbes in certain diseases, for it is still a mooted question as to whether the microbes found in the organism are the cause or the consequence of the disease with which they are coincidently found connected. Consistent with their theory, the microbists have adopted a new line of therapeutics, but even if their deductions be correct their antiparasitic treatment must prove a failure, as it is simply impossible for any medicine, whatever be its degree of tenuity, to reach or affect the microbes in any way, much less to dislodge them from the position that they occupy.

To illustrate his meaning, M. Peter recalls that in cases of pneumonia, which is now considered by some to be a parasitic disease, injections into the lungs are advised, without considering how irrational such a medication would be; for, hypothetically, the pneumococci being parasites, the parasites being essentially of a repullulating nature, it is sufficient that ten, two, or only one pneumococcus be not touched by the injection for the malady to persist by the repullulation of one or more surviving micrococci. Those who practise on this theory boast of the absence of accidents, but they forget that the powers of resistance in certain patients is greater than they imagine. Koch's theory of the parasitic treatment of cholera is equally untenable; but remarking that his comma bacillus of cholera ceases to reproduce itself in a moist medium, he actually had the absurd idea of destroying the bacilli by thirst, and did not hesitate to advise the inhabitants of Marseilles, who were being decimated by cholera, to cease watering their streets. Other practitioners, again, to have the pendant to surgical antisepsy, have imagined *medical antisepsy*. Their idea may be generous, but it is purely chimerical, for surgical antisepsy reposes on this notion, that the wounded patient is healthy, but is the subject of a wound. In medicine disease already exists, and when the physician is called in, the organism is already infected, and if admitting it is by the microbe, the latter has already taken up its position. The *antirabic inoculations* are as severely handled by M. Peter, for he condemned them as being irrational in principle and inefficacious in reality, for after having been announced with éclat, they are known to have lamentably failed, even in the hands of the discoverer of the method. In conclusion, M. Peter advised his hearers not to attach much importance to these questions —which are more calculated to divert the physician from his real position—but to attend exclusively to *the history of patients*, for the physician has not to do with maladies but with sick people; that is to say, of individualities reacting, as well as they can, against morbid accidents. This is what he terms true clinical medicine.

OUR VIENNA LETTER.

(From our Special Correspondent.)

MEETING OF THE IMPERIAL ROYAL SOCIETY OF PHYSICIANS—A CASE OF ACTINOMYCOSIS—TERATOMA OF THE KIDNEY—ERYSIPELAS AND INFLAMMATION.

VIENNA, December 12, 1886.

AT a recent meeting of the Imperial Royal Society of Physicians of Vienna, Dr. Hochenegz, assistant to Professor Albert, demonstrated a very interesting case of primary abdominal actinomycosis, which was in treatment at the surgical clinic of Professor Albert, in the General Hospital. The patient, aged forty-three years, sustained, some time ago, a lesion on the hypogastric region by a heavy hammer, which fell on the side of his body. After the lapse of fourteen days he recovered, but after nine months noticed a swelling in the inferior abdominal region, and was not able to work. Examination showed a sinus in the umbilical region, which was secreting pus, in which the characteristic grains of the actinomyces fungus could be discovered. This sinus had been first noticed three days before the patient was admitted into the hospital. The patient was losing flesh constantly. No swelling was to be seen on the neck; the condition of the thoracic viscera seemed to be normal, and the expectoration contained none of the fungus in question. A large, distinctly limited tumor, quite immovable on its base, was present on the abdomen; the skin over the swelling was not adherent. The region, upward of the prostate, offered a great diffuse resistance to the touch. The fæces and urine were normal. Dr. Hochenegz remarked that the above-mentioned lesion might have given origin to an adhesive peritonitis, and this to the formation of a solid callosity, into which the actinomyces fungus took its way out of the intestine. He, furthermore, added that, taking into consideration the good results obtained by operation in such cases, as for instance, in the cases reported by Esmarch, it would be tried at Professor Albert's clinic, either to remove the whole tumor, or the morbid parts, by means of the sharp spoon.

Professor Coskor remarked, on this occasion, that he had seen two cases of actinomycosis of the funiculus spermaticus in animals, and that six other cases belonging to this class were on record. At the same meeting Dr. Foltanek showed an interesting specimen taken from a child, aged eleven months, which represented a teratoma of the kidney. The latter was but slightly changed by this formation. The teratoma presented a great number of cysts, with serous, purulent, and hemorrhagic contents, respectively, which were lined with cylindrical epithelium. The child had died of an intercurrent disease—lobular pneumonia. A clinical diagnosis of sarcoma of the kidney had been made.

On two subsequent meetings of the same Society, Dr. Hajek read a paper on the relation between erysipelas and inflammation. I wish to refer to you this paper at some length, as I think that it will be of interest for the readers of THE MEDICAL RECORD.

Dr. Hajek said that he had undertaken the researches in question in order to determine whether the streptococcus of erysipelas differed morphologically, pathogenically, and in its mode of growth, from the streptococcus pyogenes; whether, as to pathology, each of these two species was pathogenic in its proper way, viz., whether the first produced only erysipelas, the latter only phlegmons. He first combated the statements of Resenbach and Hoffer as to the differences of these cocci respecting their form and cultures, and said that the slight differences in the aspect and the quickness of growth were of no importance. The different cultures of these microorganisms did not show any striking differences, but, nevertheless, they were not at all to be looked upon as identical forms. This became evident from the experiments upon animals which the speaker had performed for the purpose of determining the pathogenic influence of the cocci in question. He, for this purpose, inoculated two series of rabbits with the cultures of the streptococcus of erysipelas and the streptococcus of phlegmon, respectively, after the cutaneous and subcutaneous method, and found some differences in both instances. In the cases of inoculation with the streptococcus of erysipelas, he, for the greater part, observed a wandering redness with swelling of very slight degree. In a small number of these cases there presented itself, after inoculation, an inflammatory nodule, which either underwent resorption or suppuration. An intense swelling, together with the wandering redness, was but seldom observed. As to the streptococcus pyogenes, the greatest number of the rabbits thus inoculated showed an intense swelling with suppuration; the latter was present when the inflammatory process had reached its highest degree. An intense

swelling without suppuration was rare. There was never present a wandering redness without swelling, which was observed in most cases of erysipelas; only the most severe cases of erysipelas resembled the usual forms of phlegmon.

Dr. Hajek, therefore, and probably correctly, concluded that the cocci in question were of a different nature. But it was not the difference of the pathogenic behavior of these two species of streptococcus to which he attributed the greatest importance. The reason for which he felt justified in stating that there was an absolute difference between the coccus of erysipelas and that of inflammation was the result of his histological researches. The histological changes in erysipelas first manifested themselves in an inflammation of the lymph-vessels, later on in an inflammation of the interstices of the connective tissue, and only in the most intense cases the tissue around the lymph-vessels is concerned too. As to the cocci of erysipelas, they were to be met with only in the lymph-vessels, and at the most to a very slight extent, also, in the interstices of the connective tissue. The living tissue formed, in general, no particularly favorable soil for the development of the streptococcus of erysipelas. Moreover, the behavior of the latter, in the progress of the morbid process, was a passive one, as it was to be found only where it was transported by the lymph-current. The behavior of the streptococcus pyogenes to the living tissue was, however, quite different. Here, the lymph-vessels and the interstices of connective tissue were filled with close colonies of cocci, the cellular infiltration either being absent, or developed to only a very slight degree. Moreover, the streptococcus pyogenes formed close chains everywhere in the cutis, penetrated it in all directions, and perforated even the walls of the blood-vessels. Hence the streptococcus pyogenes had the disposition to represent itself in the living tissue in the form of colonies. Dr. Hajek remarked that the difference of the behavior of these cocci in the living tissue was a marked one; for, even in the most intense cases of erysipelas, the cocci were always to be found only in a proportionately small number, and this only in the lymph-vessels.

Dr. Hajek added that in future, in cases of complications of erysipelas with other affections, it will not be permitted to consider the second disease which complicates the case of erysipelas as dependent on this, but that it will be necessary to prove that the second affection was, indeed, produced by the streptococcus of erysipelas. He, for instance, succeeded in doing so in a case in which pleurisy formed the complication of erysipelas, as the streptococcus which was found in the pleuritic exudation, inoculated on five rabbits, produced only the typical complex of symptoms of erysipelas. In a second case, however, in which pneumonia was the complication of the disease in question, no such etiological connection could be discovered between the two affections, as there was found in the infiltrated lung only the "diplococcus pneumoniæ," and no streptococcus.

THE COUNTRY DOCTOR AND HARD THINKING.

To the Editor of The Medical Record.

Sir: Accept my thanks for the kind words in behalf of "the country doctor" in your issue of December 18th. Your paper every week reaches the homes of many of these quiet and, in many instances, obscure gentlemen; and while they read, study, and—permit me to suggest—*think* over the matter in its columns, as a rule they are too tired, fatigued, and exhausted to contribute the results of their observation and experience.

In addition to the infinite perplexities of practice, you gentlemen who dwell together in great cities know little of our every-day "transportation problems." We exhaust much brain-tissue in *thinking* about how to reach our patients. Long and dreary rides, by day and night, summer's heat and winter's cold, sand and mud, wind and rain, is our common lot. This, however, is sometimes varied in a way to make city doctors think!

I was called to visit a man ten miles from home. I had to cross a river; there was neither bridge nor ferry. But this is no great matter to country doctors. I thought of a waterman, hunted him up, tried to hire him to row me across. He significantly pointed to a "storm" about to break, and was astonished that a man of my "learning" should attempt to cross.

Watching this "storm" for several miles of my ride afforded abundant "thought." The little speck afar off on the horizon was an "element" of trouble. Many calls had to be made, miles had to be ridden, three good horses for changing at intervals, no dinner, and a very late supper, I *thought*, would get me through the day, barring accidents. On my early ride before seeing my first patient for that "big day," the accidents struck, the storm and the boatman struck. Having given some "thought" to boats in my rural life, I took the oars, and with the boatman's "For God's sake, doctor, don't go! my boat can't live in such a storm," I went with difficulty, saw the patient with double pneumonia, returned in safety. The boatman declined pay for the use of his boat, saying, "a doctor who risked so much for a patient could not pay him for a boat."

Again, I borrowed an "electric battery" from a brother physician about twenty miles off by the road, and promised to return it on a certain day. Rain, hail, and snow all combined to prevent its prompt return. Several miles of riding, and fifteen miles of skating over untried ice, got the battery home and enabled me to visit my patients for that day.

Servant announced my three riding-horses had "distemper." My list showed several important cases for the day. Ground covered six or eight inches with ice, snow, and slush. I *thought* about sixteen miles of walking would pull me through the day, and it did; also *thought* what a good time the famous specialists in the big cities must have in their warm and dry offices; this weighed upon my brain, as my feet grew heavy from fatigue and wet boots.

Having just dined, being very tired, and having nothing to do, I determined to rest for a day. Two urgent calls came. I drove to see one, had to cut a very nervous lady, which detained me; could see the other before dark, which was important, provided I could cross the river. Driving rapidly to the river, the boat was there, but at the bottom; *thinking* about "dry docks," "marine railways," and other luxuries common in great cities, a piece of rope, a stake, and two round fence-logs, with the help of a "small boy," got the boat on shore, turned her over to get rid of the water, launched her, crossed the river, walked two or more miles, saw my patient, got home after dark, and after supper I was called out again.

From hot weather, and being run down from overwork, I went to the city to consult a specialist. He told me, what was to be expected, no royal road to health—doctors, like their horses, should rest when weary. In my rural simplicity I *thought* he had received a circular of some new elixir (indorsed, according to the code, old or new, I cared not which, with a thousand good names), a teaspoonful of which would heal my ills. He treated me, "a country doctor," as I would treat a horse, or ox, or ass. He told me to *rest* when I was *tired*. This was Monday, and I determined to rest the next week. But I had an unusually hard week's work. Things culminated Saturday. I was very busy all day and went to bed exhausted about twelve o'clock, and was called up about one. Nothing but the results of a free fight: case one, cut hand, plastered it; case two, triceps gashed with a knife, sewed it up; case three, throat cut, sewed it up—wanted to consult on this case, no doctor near and no time to hunt for one; all well in two days, however.

Went to bed to get some rest, Sunday, 3.30 P.M., after my usual morning work. *Thinking* of many accidents possible to my surgical cases of the preceding night. At 4 P.M. called up, urgent message, accident at a hotel five miles away on the bay. Here was need for again thinking. Three cases (two of them serious) on hand, in addition to an already full list, mentally and physically exhausted neither time to eat nor sleep, no professional brother to help me. Dressing quickly, I mounted my "colt;" the groom said something about "on grass." You city doctors, with well-trained and oat-fed horses, may not know what the import of this brief sentence was? Fond of horses from youth up, every mile of my ride was painful; I was anxious to go fast, so was the colt. The day was hot, and "on grass" meant the loss of the colt if he was allowed to go fast. Got to the hotel—patient not seriously hurt—in fifty-five minutes after I was called.

Reached home, colt "tired in front," self too exhausted for another ten-mile ride; had to go back to the same place to see another case. A storm was impending; I immediately *thought* of a large sailboat, and three sailors to man her, and rode my tired beast to the place. Got the boat and men, who wanted to see the "fun," as they expressed it. The storm broke, the "fun" came, the boat went. Emerson tells of "the joys of eventful life" in a few minutes! We "scudded" several miles, made a good landing, I saw my patient, and returned home.

There are many thousand "country doctors" working out daily just such exasperating troubles. They risk limb, health, and life coming and going, and are equal, as a rule, to every emergency. Minds and bodies are constantly trained and developed. Julian with his fourteen hundred ships on wheels, Napoleon with his six hundred vessels, De Lesseps and Eads, all had men with whom they could consult and advise when in distress over transportation problems, and somebody paid the bills. The men of whom I write, in their loneliness and desolation, solve such problems themselves, and if they err in the instant thought; pay the penalty with their lives. Thinking is the country doctor's "hobby," and when at times he can't ride his horse, he always rides his hobby. Day and night he thinks, the "muddy boots" he wears do not cloud his brain, any more than the polished boots of city doctors brighten theirs. RUSTICUS.

[Well done, Rusticus. The man who braves so much to see his patients generally does something for them when he gets there.—ED.]

Army News.

Official List of Changes in the Stations and Duties of Officers serving in the Medical Department, United States Army, from January 2 to January 8, 1887.

RAYMOND, H. I., First Lieutenant and Assistant Surgeon. Ordered for duty at Presidio of San Francisco, Cal. S. O. 127, Department of California, December 29, 1886.

IVES, F. J., First Lieutenant and Assistant Surgeon. Granted one month's leave of absence, with permission to apply for twenty-three days' extension. S. O. 1, Department of the Platte, January 3, 1887.

THE INTERNATIONAL HOMŒOPATHIC MEDICAL CONGRESS, which was to have been held this year at Brussels, has been postponed to the year 1889, and will then meet in Paris. The reason of the postponement seems to have been that a fair attendance of members could not be secured and not enough papers were promised. The Belgian homœopaths do not regard this failure as a sign that their exclusive system is losing its adherents, but throw all the blame on their English brethren, whom they regard as traitors to the cause.

Medical Items.

CONTAGIOUS DISEASES—WEEKLY STATEMENT.—Report of cases and deaths from contagious diseases reported to the Sanitary Bureau, Health Department, for the week ending January 8, 1887:

	Cases.	Deaths.
Typhus fever	0	0
Typhoid fever	12	6
Scarlet fever	44	9
Cerebro-spinal meningitis	5	5
Measles	497	65
Diphtheria	152	52
Small-pox	0	0
Yellow fever	0	0

A CASE OF LONG TOLERANCE.—A writer in the *Quarterly Journal of Inebriety*, for October, 1886, reports the case of a merchant, forty-two years of age, in active life, who had been a paroxysmal inebriate for ten years. When the drink paroxysm came on he acted so wildly that both his moneyed interests and that of his friends suffered greatly. It was found that moderate narcotism from chloral and morphia kept him in bed and cut short the paroxysm. It was customary to get a two-ounce mixture of chloral, morphia, and bromide, giving the officinal dose until he became stupid or sleepy. On this occasion the usual bottle was procured, and given in regular doses every ten minutes, without any results; a second was given, then a third one, after which the patient went to sleep. His son, returning a few hours after, noticing the heavy, unnatural sleep, sent for assistance, and the physician who came found that the patient had taken in three hours about nine grains of morphia, three hundred and twenty grains of chloral, and over an ounce of bromide of sodium. Four hours had passed since the last dose had been taken, and, excepting a heavy stupor and general pallor, no alarming symptoms were present. It was decided to pursue an expectant plan, and watch the case rather than attempt any active antidotal treatment. For the next ten hours he remained in a general stupor, from which he could be easily roused, and was rational, but quickly relapsed into a quiet, heavy slumber. This stupor continued for four days, gradually growing less, with longer waking periods. Then he rode out, but was drowsy and heavy for a week more. The drink paroxysm had passed, and he returned to his usual work and health, not conscious of any unusual drug-taking. This person was a delicate, nervous man, apparently very sensitive to all the surroundings, and with no indications of any peculiar organization or debility.

IDIOSYNCRASY AS REGARDS TANNIC ACID.—Dr. J. M. Williamson relates, in the *Practitioner*, a curious case of idiosyncrasy with respect to tannic acid. The patient suffered from severe dyspnœa whenever the drug was exhibited. The writer thinks that in an anæmic subject, as was his patient, the process of converting tannic acid into gallic acid may be in some way retarded.

GIVING MEDICINES IN CAPSULES.—In the *Southern Practitioner* for September a very practical fact is mentioned concerning capsules as vehicles for unpleasant medicines. When any form of alcohol is taken with them they are rendered insoluble. Tannic acid also precipitates the gelatine covering and renders it insoluble. When the stomach is inflamed and irritable, following excess in the use of spirits, medicines should not be given in capsules. Neither chloral nor morphia should ever be given in this form to inebriates; it is useless.

A DIFFERENCE.—The difference between a hill and a pill is that one is hard to get up and the other hard to get down.—*Ex.*

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Original Articles.

THE CURABILITY OF CANCER BY OPERATION.[1]

BY GEORGE F. SHRADY, M.D.,

NEW YORK.

THE question whether or not cancer is curable by operation is one of the greatest interest to the practitioner who may be brought face to face with the answer to it. Every one who is affected with the disease is nerved with a desperate hope that an affirmative decision may be reached. The popular mind is educated to the belief that a positive diagnosis is synonymous with certain death sooner or later. Unfortunately the fears in the latter direction are quite well grounded by examples of recurrence of the disease, which are relatively frequent and correspondingly impressive. The burden of inspiring hope too often rests mainly on the consultant. With a view of aiding each other in arriving at conclusions in given cases it behooves us occasionally to compare notes and exchange experiences. We may not be able to tell other than the old story, but we may perchance point it with a new moral.

In the attempt to discuss in a general way the advisability of operation for the cure of cancer, we shall find it of the first importance to review such facts as may bear upon a local or constitutional origin of the disease. The proper conclusions from one standpoint or the other are obviously of the greatest moment in recommending any radical line of treatment.

In the way of outlining the argument in favor of the curability of cancer by operation, I shall endeavor to prove that the disease has a local origin, and is therefore removable, and that the constitution becomes affected only secondarily by a more or less wide-spread dissemination of original cancer-germs.

If with microscope in hand we should be prepared to anticipate the first departure of a given tissue from a healthy standard to a cancerous disposition, we should find at one point merely an abnormal and atypical cell-proliferation. The cells become closely packed together into irregular alveolar spaces in a stroma of more or less developed connective tissue. So much may serve as a condensed description of the well-recognized anatomical characters of carcinoma.

It may be noted here as a significant fact that such growths are rarely if ever multiple in character. The histogenetic rule is for the disease to commence at one point, and thence spread, at first along lymphatics, into the neighboring glands, and afterward, through the medium of the blood-vessels, into more remote parts.

The growth is governed by laws of its own, follows a regular course, and, as a rule, propagates its particular kind of cell to secondarily infected parts. It having once made a start it is easy to trace the effects of the progressive march of the disease. Even when disseminated into distant parts there is no proof against the working of the law of transmission of proliferating cells from the original growth. We know that these cells are the cause of infection, and that when once formed they have an inherent property of multiplying themselves in the tissues in which they find a lodgement.

Why they are formed, and why they act thus, no one knows. The study of the phenomena is, however, the most fascinating one in the whole range of pathology, and has naturally interested the brightest minds, and been productive of the most ingenious theories. A reference to the most generally accepted one, that of Cohnheim, relating to the embryonal origin of cancer, will perhaps aid us in accounting for the primarily local character of the disease. That observer maintains that certain embryonic cells from the epiblast remain latent in the tissues of the body until some conditions of irritation or other local change provoke them to activity and growth. In the absence of a better explanation, this, it seems to me, is the most plausible that can be offered, inasmuch as the growth of cancer has such a striking resemblance to the methods of primary cell-development in the embryo.

According to Mr. Savory, the lower the grade of embryonic tissue, the greater its reproductive power and the more enduring is its vital force. Certain it is that the cancer-cell is of this type, and has a remarkable inherent power of multiplying itself as such. Furthermore, beyond this early stage the typical cancer-cell never goes. He believes that what is wanting is to be found in the nature and vital attributes of the formless protoplasm out of which the cells are produced.

Mr. Hubert Snow puts it in another way.[1] He says: "The phenomena of malignancy results from conditions which irritate normal protoplasm, which cause it to proliferate abnormally, and to assume a quasi-independent parasitic vitality. These conditions may be mechanical, but in a much larger proportion they are neurotic." All of which may be interpreted to mean that the nature of cancer is to be cancerous.

Mr. Savory's view regarding low-grade cells and proportionate proliferating power makes plausible the reason why the congenital tumors as such do not, as a rule, become malignant, as the higher and more varied the development of a growth the less its inherent vitality.

We might go on with this part of the subject indefinitely, but to no better purpose than of coming to our present standpoint in the acknowledgment of the principle of malignancy locally manifested in a definite and well-recognized manner.

In spite of all the theories of cell-origin, vital law, and actual being, we still mutely stand upon the barren edge of fact, and look upon the mysteries of creation around and about us in impotent wonder. Formative protoplasm, after all, means nothing but a name. It comes as it goes. We theorize in a circle. From the how to the what of the unknowable is sharply drawn the dead line of human thought. Beyond it is an emptiness of understanding and a despair of argument. But whatever may be considered to be the origin of cancer, the first manifestation of its presence to the microscope is the atypical cell-growth, confined to a particular locality, and spreading thus in a regular and progressive way to tissues in the immediate neighborhood. This is an anatomical fact, whatever way we may explain it. Nothing more than mere theory has been brought forward in the attempt to controvert it, and we must accept the microscopical demonstrations accordingly.

[1] Read before the Practitioners' Society of New York, January 7, 1887.

[1] Lancet, October 23, 1886.

If we study the clinical aspects of carcinoma we must confess that the weight of the argument is also on the side of the local origin of the disease.

We have seen that cancer begins as an isolated growth in a particular tissue, and progresses thence by a transfer of its proliferating cells into neighboring parts. But there is something in the predisposition of certain organs to be attacked which we likewise do not yet understand. Cancer is mostly a disease of local degeneration, and most frequently attacks organs—for instance, the breast and uterus—while they are undergoing retrograde metamorphosis. But this will not explain all the cases, as cancer sometimes occurs in these organs before such changes have taken place, and while they are in an active state of evolution. We may, for the sake of the argument, allow that in some persons the degenerative changes necessary for cancerous invasion take place earlier than in others. But it would hardly be fair in this respect to compare the organs of a youth with those of a septuagenarian. Still, there is a great preponderance in favor of the original proposition. At all events, the predisposition appears to be purely local in character.

Then we are told by Virchow and others that the determining cause is irritation. This does not cover as much of explanation as we might wish for in a perfectly tenable theory. It is, doubtless, one of the factors, but not always the main one. What woman has not received a bruise of the breast? how many of them are free from lacerations of the cervix uteri? how large a number of men irritate their lips with clay-pipe stems, or have their tongues scraping against decayed teeth? And yet a comparatively small number of these have cancer. There must be something besides mere irritation to cause a face-wart in one case to stand its ground against the constant knicking and scraping of the razor, and in another case, without apparent cause, to degenerate into an epithelioma, or an adenoma—in one instance to be carried a lifetime, and in another to take on without warning the irregular cell-growth of malignancy. Paget refers to three examples of scirrhus of the breast which occurred apart from, and independently of, chronic mammary tumors situated in the same organs, and I have seen the same thing in a case of chronic mammary abscess.

There would be some comfort in being able to explain, on the hypothesis of local origin, how and why certain organs are attacked, to the exclusion of others apparently similarly exposed, but we must, obviously, for the present be content with the mere knowledge of the fact.

A strong argument in favor of a local origin is this very circumstance that certain organs are always attacked, to the exclusion of others. We have the uterus and breast in the female, while in the opposite sex we have the skin and digestive organs principally attacked. On the other hand, the spinal cord, tendons, tonsils, pharynx, liver, lungs, and prostate gland are rarely involved primarily.

Again, we notice that one organ becomes diseased, and its companion escapes. Organs also of the same structure—for instance, the parotid and submaxillary glands—are not similarly affected; the first is, as a rule, attacked primarily, the latter secondarily.

We can, perhaps, account for this condition of things by assuming that those organs most liable to malignant disease are those in which the embryonic protoplasm, in greater or less quantity, is deposited. If we go thus far we can conclude that cancer should not occur primarily in any organ in which this formative material does not already exist. But, of course, regarding this point we can demonstrate nothing.

The more we study the question of the origin of cancer the more we must take into account complex exciting causes, such as mental influences, reflex disturbances, and the milder forms of derangement that are manifested during the too rapid growth or too rapid degeneration of an organ. But we still have to account for the apparent immunity of the other important organs under all the foregoing conditions.

Interesting as is this part of our study we must pass on to consider other points in favor of local origin. Let us cursorily review some clinical phenomena. These may be stated dogmatically for the sake of brevity.

The clinical facts of cancer cannot be explained by regarding it as an affection of the blood, either primarily or secondarily. The general system is never affected in any recognizable way before the local disease has shown itself. The cancer may spread, but always from a given root. The blood is doubtless the fertilizing fluid, but nothing more.

The disease prefers to extend into adjacent tissue rather than to another similar organ. Take, for example, the history of cancer of the breast.

The disease manifests different degrees of malignancy in different situations. Scirrhus of the breast behaves differently from epithelioma of the lip.

Hereditary influences cannot militate against this doctrine of local origin; if so, they should be more frequently met with than in the proportion of one to six. Besides, is it not possible to inherit local as well as constitutional tendencies? Examples of such are too numerous to mention.

While speaking of heredity it is well to bear in mind that it is an exception for more than one member of a family to become the victim of cancer.

While this is a comforting outlook in one direction, it is far from it in another. If heredity has so little influence, the inference is that other causes, of which we are still in ignorance, operate indiscriminately upon all the human family. In fact, statistics have shown that no one can be sure to escape cancer until he has passed the age for its occurrence, and when his vital machinery is actually worn out. In other words, he can never positively be considered fortunate in respect to cancer until he is dead.

The tendency to recur can be based as much on the local as the constitutional theory. Recurrence presupposes origin. The origin is always local, and the recurrence, whenever the attempt has been made to prove it, has been found due to a systematic and progressive distribution of cell-growth into adjacent parts. The occurrence of cachexia or constitutional disturbance is explainable on a similar supposition. The constitutional infection may be said to be due to a multiplication in different organs of the original growth. The cachexia is evidently caused by the involvement of one or more vital organs.

Finally, what is certainly an unanswerable argument in favor of local origin is the cure of the disease by the removal of the local growth. Conversely, because the disease has a local habitation, operative procedure is advisable. It is with the view of establishing such a principle of treatment in all possible cases that this paper was principally written.

It has not been my purpose to give other than a summary of facts which have been accumulated by personal experience, and as the result of the study of a large number of statistics collected from various sources. Whether the conclusions are legitimate or not, the points thus presented may be of some interest to others, who, like myself, may need some data on which to found an opinion upon cases as they ordinarily present themselves for advice.

The statistics regarding the results of operations have never been collected on a sufficiently large scale.

This has yet to be done before the question as to the advisability of operation in the general run of cases can be definitely settled. No attempt in a paper of this length can be made to give more than an outline of studies in this direction. Such will, perhaps, serve our purpose in presenting a better ratio of recoveries after the use of the knife than is usually believed to be possible.

In estimating the value of operations for cancer, we must take into account the average duration of the disease in a particular organ and when left to itself. Paget, in 139 cases of scirrhus of the breast, gives the duration of life in 75 cases not operated upon as forty-eight months, while in the remaining 64, which had one or more operations, the life-average was over fifty-two months. Sibley, in 84 cases, makes the averages thirty-two months in cases not operated upon and fifty-two months when excision was practised. Baker counts forty-three months against fifty-five months. The longest duration of life in cases not operated upon was twelve years; in those operated upon a little beyond eighteen years. Satterthwaite[1] shows, by his statistics, that operations lengthen life to the extent of more than eleven months on an average. His figures are 35.7 months without operation against 46.8 months with operation.

S. W. Gross credits the prolongation of life in favor of operations one year. The same observer, in an analysis of 524 operations, says there were living and well three years after the last excision of the growths 1 in 9.19; and ten years after, 1 in 5.7. Recurrence was prevented in 32.30 out of every 100 cases.[2]

Dr. Willard Parker believed in the benefit of operations in selected cases In a paper read before the Medical Journal Association in September, 1873,[3] he reports 14 cases of cure by excision, the patients being in good health at the end of periods varying from three to twenty-seven years.

Nussbaum, of Munich, is of the same opinion, and affirms[4] that those patients operated upon live decidedly longer than those who have not submitted to such treatment.

Dr. Oldekop[5] publishes an extended report of 229 cases of excision treated in Esmarch's clinic, with 23 recoveries. The average duration of life in cases operated upon was 45.1 months, against 22.6 months when the disease took its ordinary course.

From an examination of the records of the Vienna Pathological Institute, Drs. Török and Wittelshöfer[6] are enabled to say that of 184 autopsies on cancerous papatients operated upon, only 105 had metastatic deposits, and of 182 without operation only 40 were free from secondary carcinoma.

Statistics might be multiplied to prove the chances of radical cure in cases which have been treated by the knife, and of the certainty of prolonging life by excision of cancerous growths. In fact, even better results are noted in other forms of cancer, as, for instance, epithelioma of the lip, of which nearly one-half the patients are cured. We have, however, collected our figures mainly from cases of cancer of the breast, as they are the most common of all malignant growths, and may serve as the type of the others. What is true of a part may be equally so of the whole.

We might multiply cases to prove the utility of operation, even on the basis of the severe test of Paget, an entire immunity from the disease for ten years and over. I can recall two such in my own experience, one being alive and well when last heard from—thirteen years after an operation—and the other dying of apoplexy eleven years and three months after the last operation. In the latter case three operations were performed, at varying periods, for the removal of recurrent growths.

Dr. Weir[7] reports a case in which the right breast was amputated by Dr. James R. Wood in 1856. In 1867 Dr. Post amputated the left breast; in 1873 Dr. Weir removed a recurrent growth from the right side, and again in 1877 and 1880, the patient finally dying of the disease in 1881. This covers a period of twenty-five years.

[1] Reference Handbook of the Medical Sciences, vol. i., p. 781.
[2] Medical Record, vol. xxi., p. 100.
[3] Medical Record, vol. viii., p. 435.
[4] Allg. Med. Centr. Ztg., 1875.
[5] Langenbeck's Archiv, vol. xxiv.
[6] Archiv für Klinische Chirurg., vol. xxxiv., 1880.
[7] Medical Record, vol. xxi., p. 100.

Dr. Austin Flint, in a discussion on the subject before the New York Academy of Medicine, referred to a case operated on by Dr. Frank H. Hamilton which survived the operation twenty years, and that of another patient, also treated by Dr. Hamilton, who was living ten years after the extirpation of a cancerous breast.

Dr. Daniel Lewis also related to me a case which, if I recollect right, survived an operation ten years.

Dr. C. Deadrick,[1] of Knoxville, Tenn., reports a case which also proves in a striking manner the value of repeated operations for recurrent growths. A lady, aged fifty-eight, was first operated upon in May, 1878, for a cancer of the breast and axilla, of two years' duration; again in July and August, 1878, and in May, 1879; she remained well until August, 1886, when she died of marasmus. The patient was free from the disease over seven years, and her life was certainly prolonged for that period

The question of figures is not always of the first importance in estimating the value of any particular treatment, or of forming opinions as to results in individual cases. Many other circumstances have also to be taken into consideration. In estimating the relative importance of these, the general impression of the study of all points involved must be taken into account. As a contribution in such a direction, the opinions herein expressed are duly offered.

Every surgeon meets with such cases of cure by the knife, and I am convinced that if he could follow up the subsequent history of his hospital and private patients he could add greatly to his favorable statistics. It matters not if the disease does recur, it can prove scarcely more than that the growth was not thoroughly extirpated in the first place. This may be no fault of the operator, but may be due oftener to the aggressive infiltrating tendency of the disease. Cancer has no cyst-wall; all the surrounding tissues are open to invasion, and oftentimes we find cell-growth remote from the original focus, and in such apparently healthy tissue that the microscope is alone able to decide the point. We often see this in cases of mammary carcinoma, especially in adipose subjects.

This, pathologically speaking, has a very important bearing upon the extent of the field of operation in given cases. I am firmly convinced that operations, as a rule, are not radical enough to insure a complete and thorough removal of the disease. The surgeon, being first sure of his diagnosis, should never undertake an operation unless he is also reasonably certain of the limits of the disease and is confident of his ability to cope with every emergency that may arise. There should be no doubts in his mind that every vestige of the disease has been removed. The size of the wound and the number of vessels involved are secondary considerations. For instance, it is not enough to remove a breast, but it is also necessary to carefully dissect the axilla for diseased glands, removing the latter even from the sheaths of the larger vessels. This is the only way to be on the safe side against recurrence. It goes without the saying, also, that the earlier an operation is performed the better the chance of thoroughly extirpating the disease. The operation is less formidable, the wound is smaller, and the shock is less. In doubtful cases I am inclined to give the patient the benefit of an operation, explorative at least, rather than trust to the chances of the disease spreading beyond the reach of the knife.

The time of the performance of an operation is of the greatest importance. One reason why operations so often fail is that the cases requiring them come to the surgeon too late. Statistics show that the patients operated on early always do the best and are least liable to recurrence of the disease. This fact cannot be too forcibly emphasized.

Again, it is better that we run a chance of recurrence than that we take the other alternative of allowing the

[1] Medical Record, vol. xxx., p. 345.

disease to get beyond us and kill the patient, for recurrence generally means slower growth and less pain.

But even taking everything into consideration, and allowing that the odds are against us, we should not be discouraged in giving our patients their only chance. Practically, the operation comes to that. Otherwise our patients must voluntarily resign themselves to the inevitable.

But even if the rule of recurrence obtains, there are so many examples of final cure after repeated operations that the faith in the knife should not be too easily shaken. It is sometimes a question which should wear out the sooner, the blade or the disease. There are instances of cure after five, six, and seven operations. If need be, we should say "seventy times seven," rather than grow weary in well-doing.

I am also led to believe that a new encouragement is open for surgeons in the different methods of operating at present as compared with those of former days. We can perchance commence to build fresh statistics with better results in clean and rapidly healing wounds, and in the elimination of many of the old-fashioned elements of wound treatment, which of themselves either militated against recovery or directly invited recurrence. The time may yet come when we shall ultimately make as brilliant a record for the operative treatment of cancer as for other similar procedures which heretofore were considered to be impossibilities. At least we must be encouraged to try to the bitter end, and this may perhaps be the new moral to the old story.

If any practitioner needs any special urging in this direction, let him contrast his experience in those cases which are operated upon with those which are not. In the former, there is at least relief from mental anxiety, from pain and other suffering, and life, which before was a burden, is made a happiness. In the latter, the inevitable issue is awaited with the grimness of despair—the patient undergoing tortures of mind and body too horrible to contemplate—the sole relief being in that hopeless slavery to opiates which drops its chains only at the portal of the grave.

In summarizing our conclusions the following propositions are offered:

1. Cancer is essentially a local disease, and can be cured by operation in spite of recurrence.
2. Operation, when it does not cure, prolongs life and diminishes the total amount of suffering.
3. Operations should be repeated as often as there is any chance of entirely removing recurrent growths.
4. The earlier and the more thoroughly the operation is performed the better.
5. The disease, when it recurs, is generally of a milder type than that of the original growth, less painful and less exhausting.
6. Antiseptic surgery makes more radical operations possible, with better ultimate results, than formerly obtained.

247 Lexington Avenue, New York.

A Dangerous Operation—for the Doctor.—Dr. Souchon (*Texas Medical Journal*) related a case of abscess of the axilla which was incised while the patient was only partially under the influence of the chloroform. As the knife penetrated the flesh, the patient sprang to his feet, rushed at the case of instruments, which was near by, and had half opened a drawer and was about seizing an instrument, when one of the students bravely caught him. He very soon quieted down. The next day he said that he had just come from a grinding on a sugar plantation where a number of Chinese were employed; that he was always quarrelling with them, and that, as he was going under chloroform, the students around him became gradually transformed, in his mind, into Chinese; and that as the knife penetrated him, though he felt no pain, he was satisfied it was one of the Chinamen who had stabbed him. Hence the rush he made to what he thought was his armory, for a weapon to defend himself.

ON A SATISFACTORY METHOD OF EARLY DIAGNOSING AN INTRA-PERITONEAL RUPTURE OF THE BLADDER.[1]

By ROBERT F. WEIR, M.D.,

SURGEON TO THE NEW YORK HOSPITAL; PROFESSOR OF CLINICAL SURGERY, COLLEGE OF PHYSICIANS AND SURGEONS.

The following case is of interest, as it demonstrates very happily the availability of a recent surgical device in the solution, in certain injuries, of the existence or non-existence of a rupture of the bladder.

Joseph K——, a young man, aged eighteen, was brought into my wards, at the New York Hospital, December 18, 1886, having been crushed by a very heavy packing-box falling off a cart upon him, while helping in the process of unloading. The weight came upon the lower part of the abdomen and upon the right thigh. He was seen by me some six hours after the accident. He had passed in the meanwhile four ounces of slightly bloody urine. He complained of tenderness over the pubis, and there was above this bone an area of dulness reaching upward a distance of over an inch and a half. The belly-walls were rigid, and slight tympanites was observed. Inability to raise the right thigh was also present, and movements imparted to the limb gave rise occasionally to crepitus. No shortening on measurement, however, was detected, and no fracture in the femur was made out. By examination per rectum a swelling over the middle of the ascending ramus of ischium was found, and pressure over the trochanter developed the existence of a fracture at the site of this tumefaction. He passed urine on being requested, and with but moderate pain. Nearly four ounces were evacuated, and it was distinctly bloody. On introducing a silver catheter it passed in up to the eyes, and drew off no additional fluid; but it gave a roughened sensation when about half withdrawn, and on reaching the anterior portion of the bladder about a teaspoonful of still more deeply tinged urine flowed out. He was not suffering at all from shock.

The question arose naturally as to whether a rupture of the bladder had not taken place. From the supra-pubic dulness it was inferred that if such had occurred it was probably extra-peritoneal. This point was then determined by the insertion of an aspirator needle, which evacuated a couple of drachms of fluid dark blood and its point impinged readily on the fractured bone.

The decision as to whether an intra-peritoneal rupture was present, was a more difficult one to arrive at. This could be accomplished expectantly by waiting for further symptoms; but, obviously, the earlier surgical help could be rendered in such conditions the better the chance of recovery to the patient. Only two procedures seemed available therefore, viz., digital exploration by a perineal incision,[2] or by opening into the abdominal cavity. Rather than resort to either of these I thought of using the test of distention of the bladder, as has been employed in the recently improved supra-pubic opening of the bladder for calculus, tumors, etc.

Accordingly, two hours later, the abdominal tenderness having increased, the patient was etherized and a rubber catheter first inserted into the bladder, and then Peterson's rubber-bag [3] passed into the rectum and distended with seven and a half ounces of warm water. After this had been done, and after the line of supra-pubic flatness, now slightly augumented, had been outlined by a colored pencil, seven and a half ounces of a carbolic-acid solution—one to one hundred—were slowly introduced into the bladder. When six ounces had been passed in, the contour of the bladder could be felt above the line of blood extravasation, and the additional quantity of fluid served only to make this more positive, especially so

[1] Read at a meeting of the Practitioners' Society, held January 7, 1887.

[2] See an article on Rupture of the Bladder treated successfully by Perineal and Hypogastric Incision and Drainage, Medical Record, March 29, 1884.

[3] The bag had been encircled by a netting of silk to prevent over-distention, as suggested by me in a recent paper on supra-pubic cystotomy, Medical News, December 4, 1886.

on the lateral aspect of the distended viscus. The injected fluid was then allowed to flow from the bladder and measured, and found to correspond with the quantity forced in. The demonstration was perfect, not only as to the possibility of an intra-parietal, but also, from the non-increase in the line of dulness over the pubis, as to an extra-peritoneal laceration, and the rectal bag was thereupon also emptied and withdrawn, and the patient saved from any surgical interference of a more heroic character. A body bandage was applied, and in the course of forty-eight hours all traces of blood, even microscopically, disappeared from the urine. The source of the blood was evidently from the contusion to the lower part or to the neck of the bladder, by the inwardly projecting fragments of the fractured bones, which could be felt to tilt markedly toward that organ on strong manipulation of thigh.

In carrying out this test it will be observed that the precautions of not distending too much either the rectum or bladder were carefully observed. Such are necessary, as has been shown by me in some remarks lately published on this subject,[1] in which five cases of rupture of the bladder by surgical distention are reported. To obviate this risk a rectal dilator, which can only be distended to a circumference of seven and a half or eight inches should be used, and not more than seven to eight ounces of antiseptic fluid passed into the bladder. Should more vesical distention be required, any augmentation of the injection must be made very slowly and cautiously.

The brilliant results obtained by Sir William MacCormac in two intra-peritoneal ruptures of the bladder, by laparotomy and suture of the laceration, published in the *Lancet* of December 11, 1886, conclude with the advice that in cases of doubt an exploratory incision into the abdomen would be justifiable to secure the accuracy of diagnosis and promptness of action desirable in these important cases. It is believed, therefore, that this simpler method may prove of decided advantage in the uncertainties that so often attend vesical ruptures.

IS DIVISION OF THE MEATUS URINARIUS A SIMPLE MATTER TO THE PATIENT?

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As this question is an important one, and has claimed the attention of many eminent surgeons, I do not think any apology is necessary for again bringing it to the notice of the profession, particularly when we take into consideration the fact that there seems to have been with some men, of late years, a perfect craze for doing this operation (?), and seemingly in many cases without any well-defined idea of what is to be accomplished thereby.

It is evident to anyone at the first glance that, in a given case of stricture of the urethra requiring division or divulsion, it may be necessary, in order to introduce an instrument for either purpose larger than the calibre of the canal at the meatus, to enlarge the orifice in some way, and there can be no doubt that there are quite a number of cases where such a procedure is justifiable. Again, in some cases of obstinate discharge from the urethra due to gonorrhœa, where the meatus is contracted or congenitally small, it may be good treatment to enlarge it. I think I have seen good results from such operations. But to my mind the meatus is cut far oftener, and to a much greater extent, than there is any occasion for, and as a result of this there is, I believe (and I propose to try to demonstrate it), a gradual loss of elasticity of the urethra, loss of sexual desire, and also loss of contractile power of the bladder—atony, which there should be an attempt to obviate, whenever it is possible, by restoring the meatus to its normal dimensions.

As one's ideas are so often apparently misconstrued, I wish, if possible, to make myself fairly understood at the outset. I do *not* say there are no cases requiring division of the meatus, nor do I affirm that all cases of loss of sexual power are due to a slit meatus, nor that it is possible to properly repair every injured meatus, nor that all meatus should be repaired. I *do* protest against the routine practice of enlarging the meatus, and I *do* say that, the operation having been done, I am led to believe that, generally, a certain loss of function will follow, unless the orifice be early narrowed down to its normal size, which loss of function I think may in many cases be partially restored by repairing the injury done the meatus, even at a late date.

Considering the matter in detail we may speak of the male urethra as an elastic tube with a lining of mucous membrane, and an outer coat of erectile and muscular tissues. It is not necessary here to enter more minutely into its anatomy. It is the outlet to the bladder, and its functions are to transmit the urine and semen. In the normal state its calibre varies; it is narrowest at the *meatus*, then dilates into the fossa navicularis, behind which it is again somewhat contracted, and again it dilates at the bulb to become in turn much narrower immediately behind this point where it passes through the triangular ligament, when once more it enlarges as it passes through the prostate forming the sinus pocularis. Behind each contraction it will be seen there is a dilatation, and these several variations in the diameter of the canal serve an important purpose.

In the act of urination the bladder contracts, the sphincter relaxes, the urine is driven along the normal urethra, meeting with only slight obstruction at each point of narrowing and filling each enlargement of the canal, till the meatus is reached, where the size of the current is so narrowed that the volume of fluid is obstructed and dammed back in sufficient quantity to forcibly distend the whole elastic tube, while, the pressure of the contracting bladder continuing, the urine escapes in a smooth and continuous stream. When the bladder has contracted down to its utmost, then the accelerator urinæ and other accessory perineal muscles may be called into play, by the voluntary contraction of which the greater part of the urine that remains can be quickly and forcibly expelled; or the urethra, being allowed to contract on its contents more slowly after the sphincter is closed, forces out the last few drops. There is no dribbling, because there is not from the commencement of the act to its completion any intermission in the expulsive force, unless it be due to the voluntary contraction of the compressor, or "cut-off" muscles; for though the bladder ceases to act before the urine has all escaped from the urethra the latter organ continues to do so, with much less power of course, but with sufficient to expel its contents in a continuous if less forcible stream. The narrow meatus, like the nozzle of a hose, not only increases the pressure from within and causes an acceleration of the current, but it prevents the immediate withdrawal of the expulsive force when the bladder-pressure ceases. The function of the meatus is therefore apparent, and so also, it seems to me, is that of the several normal contractions and dilatations within the canal itself, which I believe act mainly in preventing the detrusor muscle, when the vesical sphincter is relaxed, from too suddenly and forcibly filling the whole urethra, at a gush, as it were. In other words, they serve to lessen the shock and prevent pathological changes therefrom. The urethra was intended to last a man his lifetime, and nature has therefore done her best to protect it from injury and preserve it to him intact.

Now, supposing the meatus to be divided to the extent only of making it correspond in diameter to that of the spongy portion of the canal immediately behind the fossa navicularis, what is the result? Instead of

[1] Loc. cit. supra.

obstructing and narrowing the outflowing stream and thus insuring smoothness with increased force of propulsion, it allows of the escape of the urine readily, in a stream the diameter of which corresponds to that of the now narrowest (membranous) part of the urethra, and with the propulsive force greatly diminished. There is no resisting force to speak of opposed to the contracting bladder, certainly none worth taking into account, anterior to the triangular ligament, and consequently no considerable distention of the tube with subsequent contraction, no exercise of the organ, as its muscular elements lose their tone for want of proper use. At first, when urination is finished so far as the bladder is concerned, the elasticity of the canal may probably be sufficient to expel all the urine therein contained at once, but in time its contractility is lost to a great extent, and the moment the bladder ceases to exert its force a few drops of urine dribble away from the incomplete contraction of the accelerator muscles, and then, after an interval, probably after the penis is replaced, a few drops more trickle away from the contraction of the spongy urethra itself. And it is not the urethra alone that suffers, but the muscular coat of the bladder also, not being called upon to act with its accustomed vigor, loses in turn its tone—degenerates, to a certain degree, like any other muscle imperfectly or only passively exercised.

If a still greater division of the meatus have been practised the orifice of the urethra is converted into a funnel-shaped opening, there is now no resistance here to the escaping stream of urine, and the condition of affairs already mentioned occurs sooner and is more marked.

The fact must not be lost sight of that the accelerator urinæ, transversus perinei, levator ani, and probably even the erector penis, all being generally instinctively and almost involuntarily called into play at the end of the normal act of urination, to quicken the process, are, when the meatus is divided, less and less used and these muscles also degenerate, or at least lose tone. As a consequence of this, during the sexual act erection is incomplete and short-lived, and intercourse is unsatisfactory. There is also a loss of sexual desire as well as of virility, partially owing to the causes already mentioned, and, in a measure, due to the fact that the mucous membrane of the lips of the incised meatus, being exposed, loses its exquisite sensitiveness; besides, the frænum generally being injured, it no longer tightly closes and pulls down the lips of the meatus, thereby elevating the corona of the glans and causing both these parts to come in closer contact with the vaginal walls during coition.

Many men in the prime of life and apparently full of vigor have come to me with enlarged meatus and the mournful tale that they were losing their manhood. They could no longer satisfactorily perform the sexual act; perfect erections were impossible; they had no control over the discharge of semen, which generally occurred prematurely; they experienced no orgasm and they had, so to speak, lost all sexual desire. Most of these men had been guilty, no doubt, of excesses in eating, in drinking, and in venery; but thousands of others, with meatus intact, have abused themselves in every way to as great an extent, and yet they retain their sexual vigor. In some of these cases the condition of affairs may have been caused by the passage of sounds of large size, but many had never had an instrument used on them a dozen times, and in several the meatus had been cut because it was thought to be abnormally small, to hasten the cure of an obstinate clap.

What goes further than all theoretical reasoning to prove the force of my argument is the fact that I have narrowed the enlarged meatus in five cases, with the result of restoring the functions of the organs concerned in urination and copulation to almost the normal degree, and this after other methods of treatment had failed. In every one of these cases the act of urination was faulty; there was no force to the stream, nor could it be directed into a vessel or urinal without wetting the immediate surroundings, unless the lips of the orifice were pinched between the fingers. No effort on the part of the patients could hasten the flow unless the meatus were artificially narrowed, and there was always dribbling. But these were all selected cases. Only two had stricture; one at the region of the bulb, admitting No. 24 F.; the other at three and a half inches, admitting No. 26 F. In each the stricture was divided and six months afterward the meatus restored to what was considered to be about its normal size. Sound No. 27 F. can now (four months after narrowing the meatus) be passed readily on both patients.

The operation, if it may be dignified by such a title, is simple enough, but care and judgment are required in paring the edges and in passing the suture or sutures. I have generally introduced a sound a couple of numbers smaller than I had intended the meatus should admit when the wound had healed, and then pressing the lips together over this, have formed an idea of where I was to cut and where the sutures were to be introduced. The sutures may often with advantage be introduced first; one has generally been sufficient, a piece of court-plaster being carefully applied and held in position till it firmly adhered, after the suture was tied. It depends a great deal upon the extent of the enlargement as to how the operation for closing this should be done. If a considerable portion of the glans, as well as the meatus, have been divided (as I have often seen), then, after the opposed surfaces have been denuded the sutures should, I think, be passed as in the operation for closing a ruptured perineum. I have not operated on such a case. In using but a single suture I introduce the needle on one side at a point on a level with what constitutes the superior angle of the newly made wound when the raw surfaces are pressed together, and bring it out at a corresponding point on the other side; then I introduce it again a trifle above the lower angle of the wound, and carry it back through both lips and tie. I use a very fine needle and thread, the latter simply waxed. A bit of lint or cotton is left between the lips of the meatus, so that they cannot become glued together and force the urine between the cut surfaces at the first effort at micturition. Of course the patient is made to urinate just before the operation is commenced.

Now, if the results herein detailed *do* follow, and are caused by the division of the meatus, when are we justified in enlarging it? In my judgment, if a stricture be recent and amenable to treatment by dilatation at all, it is sufficient, unless the meatus be abnormally small, to dilate it (the stricture) to the extent of passing the largest sound that the meatus will admit. Of course a strictured meatus, or a congenitally small meatus, must be cut. To my mind there is no use in dilating a constricted urethra farther than can be done by stretching the meatus a number or two; if this will not suffice, division or divulsion is required; for if contraction again occurs sufficient to give rise to symptoms after such treatment, it would have done so more speedily and more surely had the dilatation been carried to a greater extent. The idea of overdistending strictures means so often irritation or inflammation that I cannot believe in it.

If a stricture be resilient or irritable, or if it has been often inflamed, there is no use in irritating it still more by the frequent passage of large sounds. It had better not be treated at all instrumentally, unless it be so narrow as to threaten or give rise to considerable trouble, until the operation of division or divulsion is practised; and after such an operation a sound of 24 to 26 F. will generally be found large enough to pass, even though the stricture have been divided up to 30 or 32 F.; for our object now is simply to separate the cut surfaces or torn tissues, and not to stretch or irritate them. In every case where the meatus has been enlarged, it should be restored again to as near its normal size as is possible within a reasonable period of time, unless there be some well-defined reason

why it should remain enlarged. It is an easy matter to again divide it if there should arise any occasion for doing so.

As to enlarging the meatus when but seemingly small in cases of obstinate clap, I can only say that while I have several times done this with great apparent benefit to the patient, in so far as speedily stopping the discharge and relieving the other symptoms, yet, on the other hand, I have seen dozens of cases, where the orifice was equally contracted congenitally, get perfectly well during an ordinary course of treatment, without any complications or sequelæ. Most certainly, in these cases, if the meatus have been cut, it should be afterward restored to the normal.

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FERMENTATION AS A PRACTICAL QUALITATIVE AND QUANTITATIVE TEST FOR SUGAR IN THE URINE.

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In an article, "Die Gaehrungsprobe zum qualitativen Nachweis von Zucker im Harn," which appeared in Virchow's *Archiv* (Bd. 102, 1885), I showed that the fermentation test enables us to recognize one-tenth per cent. of sugar in the urine; and further that, by first boiling the urine, even one-twentieth per cent. might be recognized. Now, inasmuch as fermentation is not only the most exact, but also the *only* test for sugar in the urine, the desire of bringing it more into practical use seems to be justifiable. The object of this paper will be to simplify, as much as possible, the method of making the test, and to increase the value of it by enabling us to ascertain at the same time the approximate quantity of sugar.

Before proceeding with the proposed theme, I will give a literal translation of the method of carrying out the fermentation test, as it appeared in my original article:[1]

"The test apparatus for this purpose is a fermentation-tube, and the most convenient form is that which is described by Salkowski and Leube.[2] It is made of glass, and consists essentially of four parts: (*a*) a spherical reservoir, open at both ends; (*b*) a cylindrical tube, closed at its upper end; (*c*) a somewhat narrower tube, bent so as to connect (*a*) and (*b*); (*d*) a stand to support the other parts. A small piece (one gramme) of fresh commercial compressed yeast is thoroughly shaken in a test-tube with about ten cubic centimetres of the fluid to be examined, and the spherical reservoir is filled with the resulting mixture. By inclining the apparatus, the mixture easily finds its way through the connecting-tube into the cylinder, completely driving out and replacing the contained air. Owing to the atmospheric pressure exerted on the reservoir end of the connecting-tube, the fluid does not flow back, but remains in the cylinder and tube. A little mercury is now poured into the reservoir; it sinks into the connecting-tube, forcing the fluid which was in the latter back into the reservoir. The cylinder is now filled with the fluid to be tested, and is shut off from the air by means of the mercury. It is evident that if alcohol fermentation sets in, carbonic acid gas will be evolved, and, displacing the fluid in the upper part of the cylinder, will force it back into the reservoir. The apparatus is left undisturbed at a temperature of about 30 to 33° C. (86 to 92° F.) for twenty to twenty-four hours. The changed level of the fluid in the cylinder shows that the reaction has taken place. The upper part of the cylinder is filled with carbonic acid gas. To carry out the test as suggested by Salkowski-Leube, three of these fermentation-tubes are necessary. Of these, A[3] is filled with the mixture of yeast and normal urine, free from sugar; B with the mixture of yeast and the suspected fluid, and C with a mixture of yeast and a urine to which sugar has been added artificially. (C is used simply to test the efficacy of the yeast.) Now, should the fluid have been forced out of the upper part of the cylindrical tube B, and its place taken by gas while in A, there is only a small bubble at the summit of the tube; then B contains sugar. If this is not the case, *i.e.*, if B contains merely a gas bubble similar to the one in A, while C, on the other hand, is partly filled with gas, then, obviously, B contains no sugar.

Being familiar with this method of carrying out the fermentation test, let us examine the first point of our theme, which has for its object the simplification of the method. In the above description it was said that, after having filled the fermentation-tube with urine and yeast, mercury must be added—in this way the cylindrical part of the tube is separated from the reservoir and the air. Moreover, the test is made at a temperature of 30 to 33° C., because this degree of heat affords the best conditions for fermentation. The necessity of a defined temperature and the addition of mercury are two conditions which, though they may be easily carried out in a laboratory, cause, nevertheless, some difficulties to a practical physician. Accordingly I considered the following two questions: 1. Is the defined temperature (30 to 33° C.), which is the most applicable for the fermentation process, absolutely necessary, *i.e.*, would not the ordinary temperature of the room give us a result sufficiently accurate? 2. Is a separation of the urine from the air absolutely necessary, and if so, can we not separate them by something more convenient than mercury?

In order to ascertain whether the ordinary temperature of the room would be suitable for the test, I made the following two experiments:[4]

Fermentation test at the ordinary temperature of the room.—1. April 23, 1886: A, urine, acid, 1.034, sugar; B, urine, acid, 1.020, sugar; C, urine, acid, 1.022, no sugar. After two hours: A, the cylindrical part of the tube empty; B, nine-tenths of the cylinder empty; C, a very small bubble at the summit of the tube. April 24, 1886: A, no fluid in the cylinder; B, fluid to the depth of about two lines in the cylinder; C, three small bubbles on the top of the tube.

2. May 8, 1886: A, urine, acid, 1.022, sugar; B, urine, acid, 1.024, sugar; C, urine, acid, 1.034, sugar; D, urine, acid, 1.010, no sugar; E, urine, acid, 1.020, no sugar; F, urine, acid, 1.024, no sugar. After one hour the sugar reaction in A, B, and C, is very apparent. May 9, 1886: A, seven-eighths of the cylinder empty; B, three-eighths of the cylinder empty; C, eight-ninths of the cylinder empty; D, E, and F, a small bubble on the top of the cylinder.

Both experiments clearly show that the alcoholic fermentation takes place even at the ordinary temperature of the room, and thus demonstrates, by the large amount of gas, the sugar reaction. Further, we see here also in the urines not containing sugar a small bubble at the summit of the tube, but this bubble is smaller than that produced at 92° F.

In a word the fermentation test can be used in the ordinary temperature of the room.[1]

To determine the second question, whether a separation of the test-fluid by mercury or another substance (as oil) is absolutely necessary or not, the following experiment was made:

May 9, 1886.—A, diabetic urine, acid, 1.034, plus mercury; B, diabetic urine, acid, 1.034, plus oil; C, diabetic, urine, acid, 1.034, without mercury and without oil; D, normal urine, acid, 1.018, plus mercury; E, normal urine-acid, 1.018, plus oil; F, normal urine, acid, 1.018, without mercury and without oil. After one hour: A, B, and C, plain sugar reaction. May 10, 1886.—A, B, and C,

[1] Virch. Arch., Bd. 102, p. 268–270.
[2] Salkowski and Leube: Die Lehre vom Harn, p. 223.
[3] The letters A, B, C, etc., signify the fermentation-tubes filled with the different fluids to be examined.

[1] I have made the fermentation test during summer and winter in my room; the temperature varied from 65 to 85° F.

the whole cylinder empty; D, E, and F, a bubble on the top of the cylinder.

Thus it clearly appears that the addition of mercury or oil has no influence on the reaction.

The above-mentioned experiments showed that the fermentation test could be used at the ordinary temperature of the room and without any addition of mercury or oil, but still it was a question whether the minuteness of the reaction had not been lessened in a high degree by this simplification.

Starting from this point of view, I took specimens of the urine of twelve healthy people and made with them all the fermentation test; to one of these specimens I added a little of a grape-sugar solution, so that the urine contained one-tenth per cent. of sugar; then this urine was also examined by the fermentation test:

June 4, 1886.—A, urine, acid, 1.020, no sugar; B, urine, acid, 1.016, no sugar; C, urine, acid, 1.024, no sugar; D, urine, acid, 1.022, no sugar; E, urine, acid, 1.020, no sugar; F, urine, acid, 1.024, no sugar; G, urine, acid, 1.022, no sugar; H, urine, acid, 1.026, no sugar; I, urine, acid, 1.026, no sugar; K, urine, acid, 1.026, no sugar; L, urine, acid, 1.025, no sugar; M, urine, acid, 1.018, no sugar; N = urine I, 10 cc. mingled with 0.2 cc. of a five per cent. grape-sugar solution, therefore the urine N had one-tenth per cent. of sugar (here the sugar could not be detected by Fehling's test). June 5, 1886.—A, B, C, D, E, H, I, L, and M, a small bubble (o o); F, = o; G and K, = o; N, = one-tenth cc., empty.

Thus we see by this experiment that the amount of gas at N (*i.e.*, in urine containing one-tenth per cent. of sugar) was much larger than in the other twelve normal specimens, and that it was in this way possible to recognize with accuracy the presence of sugar.

I intentionally took this large number of specimens of normal urine, because the size of the gas-bubble in normal urine varies in a certain degree,[1] and I thus learned that the quantity of gas produced in the cylinder by urine containing one-tenth per cent. of sugar is much larger than the largest gas-bubble in urine not containing sugar. Therefore it is evident that the delicacy of the fermentation test is not much lessened by the simplification; for even in a temperature of 92° F., and with mercury we are able to discover the presence of only one-tenth per cent. of sugar in a urine that has not been boiled.

As to the time elapsing before the beginning of fermentation, I could recognize the arising of the first gas-bubbles after fifteen to twenty-five minutes. Thus urine containing not too small an amount of sugar will show the reaction even at that early time.

As regards the number of the fermentation-tubes necessary for a test, it is sufficient to take two (instead of the three above mentioned): one (A) with normal urine, the other (B) with the suspected urine. Whether the yeast is good or not we can see by the developed bubble in A; for if the yeast be bad no bubble will be in A; and should the yeast contain sugar, then we should see in A a large displacement by gas.

All experiments I shall quote hereafter have been made in the ordinary temperature of the room and without the addition of mercury. I mention here this fact in order to avoid repetitions.

I shall now take up the second part of my theme, namely, how to ascertain the quantity of sugar by my fermentation test.

Two methods of ascertaining the quantity of sugar by fermentation have been used. One, called "chemical," consists in weighing a definite quantity of urine before and after fermentation; the difference of weight caused by the escaped carbonic acid gas gives the quantity of the changed sugar. The other, called "clinical," suggested by Roberts, consists in the difference of the specific gravity of the urine before and after the fermentation process.

In the following I shall try to make use of the carbonic acid gas space developed in the cylinder of the fermentation-tube to ascertain the proximate quantity of sugar in the urine, a method which has hitherto been used to detect merely the presence of sugar. Supposing I succeed in this point, then the fermentation test, as I make it, would gain much in value; for it would not only show the presence or absence of sugar in the urine, but it would also give an idea of the quantity of sugar present.

If the fermentation-tube were constructed in such a way that the whole quantity of carbonic acid gas, developed by the alcoholic fermentation of the urine containing sugar, would gather in the cylinder, then it would be easy to conclude from the development of the gas volume at a given temperature and degree of barometric pressure the exact quantity of sugar. But this is not the case, for as soon as some carbonic acid begins to gather on the top of the cylinder, a correspondiug quantity of fluid is pressed from the cylinder into the reservoir. The carbonic acid developed in the reservoir escapes from the surface of the fluid into the air. Thus the gas volume of the cylinder does not represent the whole quantity of gas generated, for it lacks the carbonic acid which is developed in the fluid driven into the reservoir. Although the gas volume of the fermentation-tube does not correspond to the whole quantity of evolved carbonic acid, it is nevertheless always larger or smaller, according to the greater or smaller quantity of sugar in the fluid.

It is probable that a fluid containing a certain quantity of sugar would evolve in the fermentation-tubes—as they are all of the same size—equal volumes of carbonic acid gas. If this be the case, then we could determine by experiment the gas volumes of fluids containing certain percentages of sugar, and from this would be able to conclude, from a certain developed gas volume in the cylinder, the quantity of sugar.

In order to be able to state easily the quantity of the gas volume in the tubes, I graduated the cylindrical part (containing six cubic centimetres) in cubic centimetres and fifths of a cubic centimetre. In this way the quantity of the gas volume can be read from the cylinder. The idea that one and the same sugar solution must reproduce in the tubes equal gas volumes has been verified by experiments. I found only small variations of two fifths to three-fifths of a cubic centimetre, and they depend probably upon the differences in temperature and barometric pressure. In order to make the test not too complicated, I intentionally did not take the temperature nor the barometric pressure into consideration.

The following tables show the quantity of developed gas volumes in specimens of urine containing definite percentages of sugar. To determine these quantities several samples of normal urine were mixed with grape-sugar solutions, and the following experiments were then made:

1. May 29, 1886: A, normal urine, acid, 1.021; B, normal urine, acid, plus one-half per cent. of sugar; C, normal urine, acid, plus one-fourth per cent. of sugar; D, normal urine, acid, plus one-fourth per cent. of sugar. May 30th, 1886: A, a small bubble on the top of the cylinder; B, = $2\frac{2}{5}$ cc. gas; C, = $\frac{4}{5}$ cc. gas; D, = $\frac{4}{5}$ cc. gas.

2. May 31, 1886: A, normal urine, acid, 1.020; B, normal urine, acid, plus one per cent. of sugar; C, normal urine, acid, plus one-half per cent. of sugar; D, normal urine, acid, plus one-half per cent. of sugar; E, normal urine, acid, plus one-fourth per cent. of sugar. June 1, 1886: A, a small bubble on the top of the cylinder; B, = $5\frac{4}{5}$ cc. gas; C, = $2\frac{2}{5}$ cc. gas; D, = 2 cc. gas; E, = $\frac{4}{5}$ cc. gas; F, = $\frac{4}{5}$ cc. gas.

3. June 1, 1886: A, normal urine, acid, 1.022; B, normal urine, acid, plus one per cent. of sugar; C, normal urine, acid, plus three-fourths per cent. of sugar.

[1] These variations usually depend upon the degree of concentration of the urine by salts, as the bubble becomes larger in more concentrated urine.

D, normal urine, acid, plus one-half per cent. of sugar. June 2, 1886: A, a small bubble on the top of the cylinder; B, = 5⅞ cc. gas; C, = 3⅞ cc. gas; D, 2⅞ cc. gas.

4. June 2, 1886: A, normal urine, acid, 1.006; B, normal urine, acid, plus one per cent. of sugar; C, normal urine, acid, plus one-half per cent. of sugar; D, normal urine, acid, plus one-fourth per cent. of sugar. June 3, 1886: A, a small bubble on the top of the cylinder; B, =5⅞ cc. gas; C, = 2⅞ cc. gas; D, = ⅞ cc. gas.

5. June 24, 1886: A, normal urine, acid, 1.024; B, normal urine, acid, plus one per cent. of sugar; C, normal urine, acid, plus three-fourths per cent. of sugar; D, normal urine, acid, plus one-half per cent. of sugar; E, normal urine, acid, plus one-fourth per cent. of sugar; F, normal urine, acid, plus one-eighth per cent. of sugar. June 25, 1886: A, a small bubble = 0; B, = 5 cc. gas; C, = 4 cc. gas; D, = 2½ cc. gas; E, = ⅝ cc. gas; F, = 1/10 cc. gas.

6. October 21, 1886: A, normal urine, acid, 1.018; B, normal urine, acid, plus one-half per cent. of sugar; C, normal urine, acid, plus three-fourths per cent. of sugar. October 22, 1886: A, a small bubble on the top; B, = 2½ cc. gas; C, = 3⅞ cc. gas.

7. October 23, 1886: A, normal urine, acid, 1.020; B, normal urine, acid, plus one-half per cent. of sugar; C, normal urine, acid, plus three-fourths per cent. of sugar; D, normal urine, acid, plus one per cent. of sugar. October 24, 1886: A, a small bubble on the top of the cylinder; B, = 2½ cc. gas; C, = 3⅞ cc. gas; D, = 4⅝ cc. gas.

8. October 26, 1886: A, normal urine, acid, 1.020; B, normal urine, acid, plus one-fourth per cent. of sugar; C, normal urine, acid, plus one-half per cent. of sugar; D, normal urine, acid, plus three-fourths per cent. of sugar. October 27, 1886: A, a small bubble on the top; B, = 3/10 cc. gas; C, = 1 9/10 cc. gas; D, = 3⅞ cc. gas.

9. November 1, 1886: A, normal urine, acid, 1.022; B, normal urine, acid, plus one-fourth per cent. of sugar; C, normal urine, acid, plus one-half per cent. of sugar; D, normal urine, acid, plus three-fourths per cent. of sugar; E, normal urine, acid, plus three-fourths per cent. of sugar; F, normal urine, acid, plus one per cent. of sugar. November 2, 1886: A, a bubble on the top = 0; B, = ¼ cc. gas; C, = 1⅞ cc. gas; D, = 3⅛ cc. gas; E, = 3⅝ cc. gas; F, = 5 cc. gas.

10. November 2, 1886: A, normal urine, acid, 1.018; B, normal urine, acid, plus one-fourth per cent. of sugar; C, normal urine, acid, plus one-half per cent. of sugar; D, normal urine, acid, plus one-half per cent. of sugar; E, normal urine, acid, plus three-fourths per cent. of sugar; F, normal urine, acid, plus one per cent. of sugar. November 3, 1886: A, a small bubble on the top; B, = ⅛ cc. gas; C, = 2⅛ cc. gas; D, = 2 cc. gas; E, = 3⅛ cc. gas; F, = 4⅛ cc. gas.

If we take the numbers found in every experiment, then we have:

For one per cent. of sugar the gas volume equals 5⅛, 5⅛, 5⅛, 5, 4⅛, 5, 4⅛ cc.

For three-fourths per cent. of sugar the gas volume equals 3⅝, 4, 3⅞, 3⅜, 3⅜, 3⅛, 3⅜, 3⅜ cc.

For one-half per cent. of sugar the gas volume equals 2⅛, 2⅛, 2, 2⅛, 2⅛, 2⅛, 2⅛, 1 9/10, 1⅞, 2⅛, 2 cc.

For one-fourth per cent. of sugar the gas volume equals ⅜, ⅜, ⅝, ⅜, ⅝, ⅜, 3/10, ⅛, ⅛ cc.

For one-eighth per cent. of sugar the gas volume equals 1/16 cc.

By this table it becomes evident that the numbers for the quantity of the gas volume in different samples of urine containing the same percentages of sugar are always approximately equal, and differ at the most by three-fifths cubic centimetres.

The average numbers quoted in the table are: One per cent. of sugar equals 5 cc. gas; three-fourths per cent. of sugar equals 3⅝ cc. gas; one-half per cent. of sugar equals 2 cc. gas; one-fourth per cent. of sugar equals ⅜ cc. gas; one-eighth per cent. of sugar equals 1/16 cc. gas.

I intentionally avoided ascertaining the quantity of the gas volumes in smaller proportions than in quarters (one, three-fourths, one-half, one-fourth), in order that the differences of the gas volumes might be as great as possible, and that they could be easily distinguished from each other.

With one per cent. of sugar the gas volume is 5 cc.; thus the gas fills nearly the whole cylindrical part of the fermentation-tube. If the urine contain a little more than one per cent. of sugar, then the whole cylinder will be occupied by gas; the urine, pressed into the reservoir, will deliver all its carbonic acid into the air, and will give us in this way no means of ascertaining how much more than one per cent. of sugar it has contained. Therefore, if a sample of urine is given to us for examination, and we make the fermentation test in the *graduated* fermentation-tube, we shall be able to say on the following day, *i.e.*, after the fermentation has taken place, whether the urine contains sugar or not, and if sugar, then how much of it, whether one-eighth, one-fourth, one-half, three-fourths, one per cent., or more than one per cent.; but we shall not be able to say by the first test alone how much more than one per cent. of sugar the urine may contain.

In order to ascertain by this fermentation test approximately the quantity of sugar in urine containing more than one per cent. of sugar, it is necessary to dilute it with water.

Diabetic urine of a straw color, and with a specific gravity of 1.018 to 1.022 was usually diluted by me two times; of 1.022 to 1.028, five times; 1.028 to 1.038, ten times. The test is to be made with the diluted urine. After the reaction has been completed the gas volume of the fermentation-tube is read, and thus the quantity of sugar ascertained; in this way the original (not diluted) urine will contain, in proportion to the amount of dilution, two, five, or ten times more sugar than the diluted one.

As an example for the quantitative fermentation test the following experiment may be mentioned:

June 28, 1886: A, diabetic urine, 1.040, diluted ten times; B, diabetic urine, 1.038, diluted ten times; C, diabetic urine, 1.020, diluted two times; D, normal urine, 1.010. June 29, 1886: A, = 3⅛ cc.; B, = 2½ cc.; C, = 5 cc. gas; D, a small bubble on the top of the cylinder. Thus A has 3⅛ cc. gas = ¾ per cent. of sugar, the urine has been diluted ten times, therefore the original urine contains 7½ per cent. of sugar; B, = 2½ cc. = ½ per cent. × 10 = 5 per cent. of sugar; C, = 5 cc. = 1 per cent. × 2 = 2 per cent. of sugar; D, no sugar.

This method of ascertaining the quantity of sugar by fermentation I applied during several months in the examination of the urine of the diabetic patients of the German Hospital, and I was fully satisfied with the result. I also compared several times the results found by fermentation with the numbers given by the quantitative Fehling's solution test. As bearing on this point the following two experiments may be mentioned:

1. *Fermentation test.*—June 10, 1886: A, diabetic urine, 1.040, diluted ten times; B, diabetic urine, 1.026, diluted five times; C, diabetic urine, 1.020, diluted five times; D, normal urine. June 11, 1886: A, = 4½ cc. gas = over ¾ per cent. × 10 = more than 7½ per cent. of sugar; B, = 2 cc. gas = ½ per cent. × 5 = 2½ per cent. of sugar; C, = 1 cc. gas = over ¼ per cent. × 5 = more than 1¼ per cent. of sugar; D, no sugar.

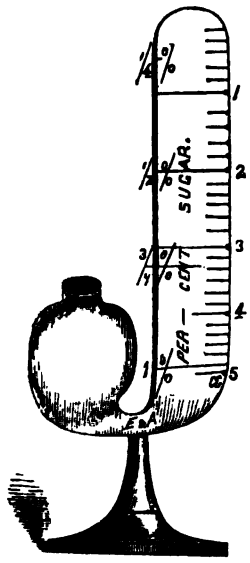
Fehling's test.—A, = 7½ per cent.; B, = 2 per cent.; C, = 2 per cent. of sugar; D, no sugar.

2. *Fermentation test.*—June 14, 1886: A, diabetic urine, 1.032, diluted ten times; B, diabetic urine, 1.038, diluted ten times; C, diabetic urine, 1.024, diluted five times; D, normal urine. June 15, 1886: A, = 2⅝ cc. gas = ¼ per cent. × 10 = 5 per cent. of sugar; B, = 3⅛

cc. gas = ½ per cent. × 10 = 7½ per cent. of sugar; C, = ⅜ cc. gas = ¼ per cent. × 5 = 1¼ per cent. of sugar; D, no sugar.

Fehling's test.—A, = 5 per cent.; B, = 6½ per cent.; C, = 1¼ per cent. of sugar; D, no sugar.

If we now compare the results of the quantitative test by Fehling's solution with the results found by the fermentation test, we find that they are not always absolutely equal, although the difference is but slight. In this way it appears that the method of ascertaining the quantity of sugar by the gas volume in the fermentation tube gives true and approximately correct results.



The advantages of this mode of ascertaining the quantity of sugar consist in its being neither troublesome nor complicated, and it can also be employed by every physician. Urine containing albumen can be *directly* examined for sugar by the fermentation test;[1] it is not necessary to separate the albumen before applying the test, as in other methods. That is another point in favor of the fermentation test.

In order to make the quantitative determination of sugar yet easier, we have written on the cylinder figures showing the percentages of sugar. A fermentation-tube bearing this scale shows directly, by the level of the urine, the per cent. of sugar, and can be therefore called "Fermentation Saccharometer."[2]

From a study of the experiments detailed in this article we may formulate the following conclusions:

First.—The fermentation test can be made in the ordinary temperature of the room.

Second.—The addition of mercury is not necessary.

Third.—The volume of developed gas in the cylinder gives us an idea of the approximate quantity of the sugar present in the urine.

304 West Fifty-fifth Street.

Death of Dr. Margary.—On November 28th Dr. Fedele Margary died in Turin, after a long and painful illness, which he bore with unusual patience and courage, at the age of forty-nine years. He was one of the editors of the *Archivio di Ortopedia*, and was among the best known and most skilful of the orthopedic surgeons of Italy. He was one of the first Italian surgeons to practise osteotomy, and was a most ardent advocate of that method for the correction of deformities of the extremities. The last number of the journal above mentioned contained a most valuable statistical article by Dr. Margary on "Osteotomy, Osteoclasis, and Redressement Forcé." His loss will be felt, not only by his fellow-countrymen, but by general and orthopedic surgeons throughout the world.

Water and Obesity.—M. Callamand, in a critical review upon the rôle of water in nutrition, in the *Archives Générales de Médecine*, comes to the conclusion that water causes neither an increase of fat nor emaciation, and that it neither hastens nor retards nutritive changes. And he says that, in the treatment of obesity, all rules concerning the quantity of fluids to be taken are useless.

[1] I made the fermentation test several times in diabetic albuminuria, having reparated the albumen first by boiling and filtering, and also without any preparation. In both cases the fermentation took place. The gas volumes were equal.

[2] Messrs. Eimer & Amend, 205–211 Third Avenue, New York, are the makers of this instrument, and the apparatus can be had there in correct form for seventy-five cents apiece. For the convenience of physicians a set, consisting of two fermentation saccharometers with a graduated test-tube, has been put up in pasteboard case, with directions, etc., for $1 50, complete.

Clinical Department.

NOTES OF SEVEN HUNDRED AND SIXTY-FIVE CASES OF LABOR.

Dr. L. N. Sharp, of Minneapolis, Minn., sends us the following interesting observations on 765 consecutive cases of childbirth occurring in his practice, as to the time of day at which labor terminated: Seventy of the women gave birth to children between the hours of midnight and 2 A.M.; 70 between 2 and 4 A.M.; 59 between 4 and 6 A.M.; 73 between 6 and 8 A.M.; 66 between 8 and 10 A.M.; 71 between 10 and 12 A.M.; 52 between noon and 2 P.M.; 47 between 2 and 4 P.M.; 63 between 4 and 6 P.M.; 61 between 6 and 8 P.M.; 71 between 8 and 10 P.M.; 61 between 10 and 12 P.M. Four hundred and nine of the cases occurred between midnight and noon, and 356 between noon and midnight.

These mothers gave birth to 778 children; 410 were males, and 368 females.

The deaths among the mothers were 9. Of these 6 died from puerperal peritonitis, 2 of convulsions, and 1 with placenta prævia. The deaths of peritonitis were not related to each other in the way of contagium. In the regular numbering of the cases they came as 39, 670, 703, 708, 726, 746.

In the cases of the deaths from puerperal convulsions, the first was in a primipara. The arm presented, and, after the delivery the convulsions continued up to the time of death, six hours later. In the second case it was the sixth child. The convulsions came on when the pains became severe, while the os was but little dilated. The placenta was attached, and had to be torn off. The convulsions continued, and the woman died two hours and fifteen minutes after the delivery of the child.

There was only one case of placenta prævia, and the mother died undelivered. She was not my patient, but I was called when her labor came on, and found her almost bloodless. The os was but little dilated, and I could only insert the end of the finger through it. The woman died in an hour after my arrival.

Among the number were 13 cases of twins. In 7 both children were males, in 5 both were females, and in 1 case a male and female. All of these children lived but three. In one case the child born first died before the other was born, and the second died before I left the house. In another case one child died the following day. Forceps were not used in any of these twin cases.

There were in all 22 still-born children. The cause of death in 9 of the cases was from the ill health of the mother; in some of these cases the child was dead before labor came on, and in some others the child had not vitality enough to survive the ordeal of birth. In one instance the cord came down and remained for six hours before the birth of the child, and the death was from pressure upon the cord. In 5 cases the head presented, but the children could not be resuscitated. In 5 cases the feet or breech presented; in 1 case an arm came down, and another was one of shoulder presentation.

In 4 cases only was turning resorted to; 1 case was an arm and another a shoulder presentation. In another the mother had convulsions, while in still another the head did not engage the superior strait in a proper manner.

The placenta was attached in 10 cases, and had to be torn loose. In all these cases the mother survived the labor, except in 1 case, when she died of puerperal convulsions.

The forceps were used in 26 cases; 2 of these died afterward of puerperal peritonitis; 24 mothers recovered.

Of the 778 children there were 747 head, 14 breech, 12 foot, 2 arm, 1 shoulder, and 2 face presentations.

There were 19 cases of post-partum hemorrhage, with 1 death. In these I have only counted those severe cases in which the mother became pulseless from loss of

blood, where the uterus did not contract, or concealed hemorrhage endangered the life.

Nine mothers had puerperal convulsions, and two of these died. In one case the convulsions preceded labor, and the mother died in an apoplectic condition. In another the eclampsia came on while labor was progressing and continued after the child was born, and the mother died suddenly two hours later. In the other cases the convulsions came on during labor, and in all, save one, continued for a few hours afterward, when the mother regained consciousness and all went well. In one case, with the last expulsive pain came a convulsion, the child was born, and no more trouble ensued.

There were two cases of phlegmasia alba dolens. One in the case of an arm presentation, where the child was turned, and the other followed excessive post-partum hemorrhage. Both cases recovered.

Inversion of the uterus occurred but once. The mother had a moderate labor with her first child. In a few minutes I made gentle traction on the cord, and the inverted uterus came out through the vulva. The placenta was firmly attached to the fundus. I peeled it off, and with my fingers against the fundus, carrying the hand in the vagina, I had the satisfaction of finding the uterus properly returned. The shock to the mother was but slight, and she recovered without an untoward symptom.

Craniotomy was performed twice. In both cases the child's head was large, and repeated efforts with forceps, in the hands of consultant as well as my own, failed to bring the child. One case was complicated with puerperal convulsions, and turning could not be accomplished. The mother died a few hours after the extraction of the child. In the other case the mother died of peritonitis, which rapidly followed the extraction of the infant.

In one case, in which both mother and child did well, no blood was lost during labor, and no lochial discharge followed.

In three cases the funis came down ahead of the child, and only one child of the three was saved. In one case the funis had been down six hours before I saw the case; the child was dead.

The cord was so short in one case that it broke during the birth of the child.

One seven-months child was born exactly nine months after a former labor. The child lived.

There was one case of hernia cerebri; the greater part of the brain-substance came through the posterior fontanelle into the sac. The child breathed for a few minutes after birth and died.

Two cases of hydrocephalus were met with. In both the head was punctured and the water let off, when the labor proceeded to termination. The mothers both made good recoveries.

Three cases presented deficient development: One a hare-lip; one in which the two parietal and the occipital bones were wanting; in the other the bones were absent from the arch, over the eyes, of the frontal bone to the commencement of the spinal cord. A part of the temporal bones and the bones at the base of the brain were present, as were also the bones of the face.

Of the 765 mothers, the fact may be mentioned that 19 were unmarried; they all made good recoveries.

In all these cases I do not know of a ruptured peritoneum or a ruptured os; yet the os might have been ruptured and escaped observation, but I never found it in any of the cases which came to me for gynecological treatment. I have never, in my obstetric cases, met with vesico-vaginal or recto-vaginal fistula. I always gave my cases all the time which appeared to me consistent with the physiological act, and only interfered when nature appeared to act tardily, or was insufficient to effect safe delivery.

In some cases I attended the same woman in as many as seven successive confinements, and found the time of day in the labor was different in every case; so also the character of the labor. Sometimes it would be speedily over in a woman who at another time would have a protracted labor. The presentation at one time would be no guidance for another subsequent presentation in the same woman. The time of rupture of the membranes was not the same in different confinements; neither, if the woman had a bad getting up at one time, could an inference be drawn that it would be the same at another time, if the health was generally good. Each individual case appeared to have its own characteristics, even in the same woman. And yet there is a sense in which each woman has her own type of delivery.

INFLUENCE OF POSITION ON THE PROGRESS OF LABOR.

Dr. S. Haynes, of Saranac, N. Y., writes: "On May 23, 1867, I was in attendance on Mrs. —— in her first labor. It was a tedious one, and had continued for many hours without making satisfactory progress. The thought occurred to me that perhaps the patient may have occupied a particular position for some time during her pregnancy; if so, that by her resuming that position now, the uterus, with the contained child, would assume its normal position. On making the inquiry I learned that for a long time she could rest or sleep only on her right side. The patient now took that position, when, happily, her labor took on a favorable turn and terminated in due time. The pronounced good results in this case following the assumption of that position which the patient had been compelled to occupy for a length of time during her pregnancy—when in the lying position—decided the writer to continue his observations on this point, in the future, and this he has now done for almost twenty years. According to this experience it has been ascertained that in many difficult or tardy labors the progress of the case is profoundly influenced by placing the woman in that position which she has been compelled to take for her own comfort during her term of pregnancy. But further, the writer has observed that in making an examination in the first stage of labor, in case the patient has been compelled to lie on the one side for a length of time before confinement, the os uteri may be reached much more readily on placing the patient in the position which she has previously occupied from choice or necessity."

TWO CASES OF POISONING FROM ANTIPYRINE AND NUX VOMICA.

Dr. R. B. Henderson, of Wilton, N. C., reports the following cases:

Case 1.—A girl ten years of age was first seen on October 7th, and was found to be suffering from remittent malarial fever, having a temperature of 104° F. About three grains of antipyrine were given, and sulphate of quinine was ordered for the next day. On the 13th tincture of nux vomica was ordered to be given in three-drop doses three times a day. She was seen again two days later and was found to be doing well, although she had been restless at night. The temperature was 102° F. Thirty grains of antipyrine were ordered to be given in two doses at two hours' interval. A few hours later the uncle of the patient called and asked what had been left for the child to take. He was told what the drug was, and said: "Well, sir, it killed her in fifteen minutes." Dr. Henderson went with him and found his patient really dead. He was informed that the medicine had caused an intense burning in the throat and stomach, and that the patient had vomited a watery fluid, then fainted, and was dead. There were no convulsions nor anything to indicate that nux vomica had caused the death. The family said that the child had at times complained of palpitation of the heart, and they all thought she died from heart disease. This was also the conclusion of the writer, but it was modified considerably by the occurrence of a second similar case.

CASE II.—A young lady living in the same neighborhood, and suffering from the same type of fever, was treated at first with quinine in doses of thirty grains a day. As this seemed to have no appreciable effect upon the temperature the writer gave her four grains of antipyrine and remained with her half an hour or more to see if any unfavorable symptoms developed; as none did he left six grains to be given in three doses at hourly intervals. No unpleasant effects followed. The next afternoon the fever was up again. Not having any antipyrine, Dr. Henderson increased the quinine ten grains for that day and left tincture of nux vomica, to be taken in five-drop doses three times a day. A few days later he called and found the temperature 104½° F. in spite of the fifty grains of quinine, so he concluded to try antipyrine, administered five grains (the patient had taken five drops of tincture of nux vomica an hour before) and awaited results. In five minutes she complained of a burning in her throat and stomach and then nausea, and vomited a watery fluid. After the vomiting she felt no better, but was sicker, and felt weak, and her pulse was feeble. The writer gave her ipecac and produced emesis, and then gave her whiskey and water freely, applied cold cloths to the back of her neck, gave half a teaspoonful of tincture of digitalis, and then more whiskey and water, keeping the patient in the sitting posture for a while. She asked to be laid down, and in about a minute the muscles of her neck began to stiffen, the fingers were drawn, and respiration was nearly suspended. She was immediately raised to the former position and fifteen or twenty grains of chloral hydrate were given, and the respirations being intermittent, artificial respiration was made for five or ten minutes, and then thirty minims of whiskey and ten minims of tincture of digitalis were given hypodermically. Finally ten minims of aromatic spirit of ammonia were injected, and the patient had no further bad symptoms. She was kept under the influence of chloral for the following twenty-four hours.

The patient said that she was perfectly conscious during the first part of the attack, but could not speak, and that she lost consciousness when the chloral was given, and did not know anything for several hours. Dr. Henderson concludes: "I submit this report, though imperfect, in the hope that someone will tell me what was the active principle in the two drugs to produce the condition that followed their administration so near together. Each patient had taken antipyrine without nux vomica, and nux vomica for several days without the antipyrine, and no bad effects followed. When they were taken within an hour of each other, however, death followed in one case and nearly did so in the other. I will state that I had been in the habit of treating cases of this nature with quinine in the morning and antipyrine in the evening, when the temperature was high, and had never heard any complaint from it, though I had given it in twenty cases before the first accident, and was highly pleased with the results. Since the last case reported I have not used it. I would like very much to use it, but shall wait until I can get some information as to its physiological action."

FOREIGN BODY IN THE INTESTINE.

DR. CLARENCE KING, of Machias, N. Y., writes: "I have noticed several letters in THE RECORD relating cases of foreign bodies being swallowed by children. While attending my last course of lectures I boarded in a family where there was a little girl about nine or ten months old, who swallowed its mother's breast-pin. The pin was of gold, an inch and a half or two inches in length, and had several sharp edges and corners on it. Besides this the clasp was uncaught, thus increasing the liability of the pin to become lodged in the intestine. The child obtained the pin from its mother's clothes unknown to her, and it was only when the pin was missed that the suspicion arose as to what had become of it. The child suffered no inconvenience, except a coughing and crying fit at the time it was supposed that she swallowed it. Her father, who was a physician, gave her a full dose of castor-oil, yet it was not until two days afterward that the pin was passed per rectum. Besides this case several others have come to my knowledge in which coins, buttons, and other playthings have been swallowed, and I have never yet heard of any ill effects following. I have therefore concluded that this is not a very rare accident or one of great clinical importance. This last statement I would modify according to the article swallowed. Expectancy, or the administration of a light cathartic, seems to be all the treatment necessary."

Progress of Medical Science.

OVERFILLING AND DILATATION OF THE COLON.—At a recent meeting of the Chicago Medical Society Dr. J. S. Jewell read a paper on this subject. He said that for the last ten years this subject had attracted more or less attention. During the last eight or ten years he had accumulated a list of over five hundred carefully studied cases, in which the condition named existed, and concerning which he gave his observations. His mode of investigating the cases in which the overfilling existed has been as follows: The patient is stripped so that the abdomen is bare, the abdominal walls being relaxed. Then he takes a plate of soft rubber, at least two inches in length by an inch and a half in breadth, and one-fourth of an inch in thickness, and a heavy steel hammer, quite as heavy as the ordinary surgical bone-hammer. With this the abdomen is carefully percussed over the track of the colon from its origin, tracing it up under the liver, across and down to the sigmoid flexure. Thus percussing over the track of the colon and carefully locating every mass of fæces (even in persons with fleshy abdominal walls), he has been able to get at its course and contents. Out of these five hundred cases, perhaps one hundred have said that they were as "regular as clockwork" in having movements from the bowels. But upon examination, in most such cases the colon was found to have variable quantities of fæcal material lying in it. The part of the colon most subject to dilatation is the sigmoid flexure and the descending colon. At the flexure of the colon, deep in the left hypochondriac region, almost as frequent as in any other part of the course of the colon, he had found it dilated and filled with fæcal matter. The next most common situation is the transverse colon; last of all the cæcum. The common way is to find masses of fæces lying in lumps here and there not filling the entire intestine. In most cases investigated, the colon was dilated, apparently, in some part or other, all the way from two to three times its proper calibre. This class of patients are all liable to become "bilious," and are habitually taking cathartic pills, mineral waters, etc. In every or nearly all instances, Dr. Jewell could trace their "biliousness" to gradual filling up of the colon, and the disturbance produced from this cause in the digestive apparatus higher up. The change in the secretions of the mouth, the bad breath, the unhealthy odor of the skin produced by absorption of fetid substances from the rotting masses in the intestine, together with the coloring matter in the same, gives the skin of the patient a peculiar dirty, sallow color. One of the first things to occur in addition to the dilatation and weakening of the muscular coat of the colon by accumulation of material in it is irritation of portions of the mucous membranes where the fæcal masses lie, producing local catarrhs. This occurs with a frequency and to an extent that no one would suspect, unless they see the patient or nurse to carefully watching the stools. The next important factor in these cases is irritation of

the peripheral ends of the sensory nerves of the intestinal mucous membrane, irritated by contact with the fæcal masses. The nerves that return from the colon probably enter the spinal cord, at a level not lower than that of the tenth or eleventh dorsal vertebræ. Above the level named they probably enter the cord at various points higher up in the lower two-thirds of the dorsal cord, not to mention direct medulla connections, etc. Along these nerves are propagated the irritative impressions from the colon into the spinal cord or medulla, and thereby "switch" connections, outgoing or reflex impulses, are sent to other portions of the body, producing thus various forms of disorder to be referred to later. He believes that he has not found one case in twenty of ordinary melancholia that has not had its origin partly, or in some cases apparently entirely, in overfilling of the colon. Headache, and a great many transient disorders referred to the head, more frequently owe their origin to this source than he had ever supposed. Next is the influence upon the circulation in general, especially upon the heart's action, lowering its tension, and thus giving a feeble pulse. Dilatation of the colon often causes a sluggish capillary circulation, and this accounts for the frequency with which patients complain of cold extremities. Dr. Jewell has found patients who could not remember having had naturally warm feet for years, when upon removal of the masses in the colon the feet would become warm. In insomnia he has found the condition of the colon described to be a frequent cause, the colon being the seat of the original disorder. There is lowering of the vascular tension nearly always in these cases; hence the feeble nutrition and feeble circulation in the brain, not to mention other parts. The next most important result of dilatation and overfilling of the colon is the fact that these masses of retained fæcal substance in various ways poison the individual, by absorption of septic material. He has had three cases of epilepsy that he traced exclusively, as far as could be told by the results of treatment afterward, to disease in the left extremity of the colon caused by fæcal accumulations, and when the disorder was removed by proper means he was able to relieve the epilepsy. For the removal of these masses, as a rule, he does not use purgatives, but injections are given after the following plan: A large bag fountain-syringe, holding half a gallon, is adjusted at a convenient height from the floor, the patient lying down in the knee-chest position. The fluid should flow with considerable force until it makes its way past the upper sphincter, which is at a lower part of the sigmoid flexure; pass one quart to one-half gallon of water, according to the size of the colon, so as to fill the entire organ to the cæcum. In some instances he has been able to introduce as much as a gallon of water into the colon, the patient feeling no serious inconvenience from it, and a half-gallon is a common amount to introduce. The patient is then directed to lie down on the left side, and by a proper massage over the ascending colon the liquid is moved with the contents of the bowel toward the rectum. This should be done once or twice in the twenty-four hours until the colon is clear, and by this means it should be kept so. After this has been accomplished give the patient something that will act as a stimulant to the nervo-muscular coat of the colon. A good prescription for this purpose, he has found, should contain in pill or capsule form extract of cascara, a little belladonna, strychnia, hydrastis canadensis, and aloes. By care the colon can be kept clear, and the disorders of the stomach usually disappear, the secretions of the mouth are improved, the skin assumes a healthier color and loses the distinctly fæcal odor that it frequently has.—*The Medical Age*, October 11, 1886.

Spontaneous Shedding of Nails in Hysteria.—Dr. T. Falcone, of Naples, records a case of hysteria, prolonged and aggravated, in the course of which there was spontaneous shedding of the finger- and toe-nails. The patient was fifty years of age, and since 1870 had, after a mental shock, been subject to hemicrania and other nerve symptoms, including paraplegia, hyperæsthesia, globus, etc. She recovered, but after remaining well for six years, the symptoms returned on the occasion of her first visit to the grave of her son, whose death had in the first instance been the exciting cause of her attacks. The affection of the nails was preceded by tingling in the fingers and toes, especially the thumbs and great toes, followed by suppuration in the bed of the nail. It was noted that on the right thumb the new nail was formed directly from the bed of the nail by proliferation of epithelium, which assumed a horny character; but on all the other affected fingers and toes the repair took place in the usual way, viz., by growth from the matrix. The condition altogether was regarded as a dystrophic one, due to disordered nerve function.—*The Lancet*, October 30, 1886.

The Internal Treatment of Gonorrhœa.—At a late meeting of the Berlin Medical Society, Dr. Posner stated that, although what had been learned about the gonococcus was extremely interesting, it had not given us much that was practical so far as treatment was concerned. Local anti-bacterian treatment had not yet been followed by brilliant results, and to-day we treat gonorrhœa with the old remedies, and combat it especially with the various forms of injections. These injections are not valuable in that they destroy the gonococci, but because they cure the inflammation of the mucous membrane. Internal medicines act beneficially by passing off in the urine and cleaning out the urethra. Dr. Posner speaks highly of sandal-wood oil, which has such a reputation in France. He has used it much because he has become convinced that injections, although they work very well in some stages of gonorrhœa, still are not well borne by many patients and may, indeed, act injuriously. From the speaker's observations he believes that many gonorrhœas which would get well of themselves under suitable régime are often kept up artificially by injections. He had used the sandal-wood oil in fresh cases, and could state from his own observations that, under all circumstances, it was better borne than the other balsams, and that it exerted a better influence on the disease. In those complications of gonorrhœa in which we have to cease injections on account of epididymitis, cystitis, prostatitis, etc., this drug is greatly to be recommended. Dr. Posner had repeatedly seen cases of acute catarrh of the bladder, with bloody or turbid urine, improve and the urine become clear after a few doses of the sandal-wood oil. In old cases of cystitis and prostatitis it was also beneficial and always acted favorably on the tenesmus, and cleared up the urine. In chronic gonorrhœa, less stress was laid upon its beneficial action. The purity of the preparation was of great importance. The most elegant form to use was the French preparation which went under the name of "santal midi," put up in capsules which were easily taken and well borne. The patient took daily from ten to twelve of the capsules of five drops each. If the oil did not agree with the patient, a little hydrochloric acid might be added to the doses, and, to improve its taste, a few drops of oil of peppermint. Altogether, according to the speaker's idea, sandal-wood oil was the most efficacious internal remedy at our disposal.—*Deutsche Medizinal Zeitung.*

Cataleptic Sleep.—A case is related in *El Siglo Médico* of a recruit sent to Havana from the North of Spain. After having been in Cuba some months he began to suffer from homesickness and finally fell into a cataleptic sleep in which he remained for fourteen months, neither speaking nor moving. He was fed every six or eight hours with milk. He was at last aroused by hearing the music of a dance peculiar to his native place, and made a perfect recovery.

THE MEDICAL RECORD:

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THE PRESENT CONDITION OF THE MEDICAL PROBLEM.

THE numerous comments made on our recently published prospectus of the "Little-toe Dispensary" show that its satire was appreciated. Its statements served as apt illustrations of the existing state of affairs. Despite all that has been said concerning the abuse of medical charities, the work of making medical paupers goes steadily on, and even seems to be putting forth some new agencies of evil. An occasional warning voice is raised, but seemingly without avail. In these first few weeks of the present year of grace it is well for us to take an inventory and see how the public and the profession stand on this question. Party platforms are revised by political managers to suit the needs of varying campaigns. Are our old arguments still valid and forceful, or do they need revision?

If anyone wishes to reform an abuse, he must know no such word as discouragement. He must rely for his inspiration on the truth of his cause. The honesty of his motives will be impugned. He will be accused of posing for the sake of notoriety. The subject of axe-grinding becomes a prominent topic in the conversation of his critics. But the work of reform goes steadily on, and, if truth is evolved, the battle is finally won.

For the past two or three years THE RECORD has freely criticised the improper management of some of the medical charities of New York. It has not hesitated to speak plainly. The basis of all facts and figures published has been the annual reports of the institutions in question. No statement has been made which these authorities would not verify. A free discussion has followed concerning the evils complained of, and the remedies needed. Our columns have contained all shades of opinion from the various parties to the controversy. One public meeting has been held. A committee was appointed, consisting of representatives of the various institutions, to see what could be done. This committee has not, to our knowledge, made any public report.

The whole question may be summed up in these few words. With only two or three exceptions, no pains are taken to select the worthy and reject the unworthy applicants for medical charity. Ask any physician in New York, and he will admit the existence of this evil. We are not combating a shadow.

And yet, in the face of all this, we find the dollar-a-month system still in vogue at one institution, and the managers of another erecting a dispensary in the middle of a section of wealthy residents, and in a district already fully equipped to care for all the sick poor within its borders. Almost a public protest has gone up against this insult (for such it is) to those agencies in our midst which are trying to reduce our cumbrous system of medical charity to a state of simplicity and greater efficiency.

On the other hand, we note with pleasure the steadfastness of those institutions where the seed of reform has been planted. Already it has sprung up and borne some fruit. The profession has become aroused, and this is the first great result. It lies in its power to bring the institutions that so grossly err to terms. In spite of one or two discouraging features, we regard the outlook as on the whole hopeful.

MEDICAL SOCIETY OF THE STATE OF NEW YORK.

WE have received the "preliminary announcement of readers and papers," and it foreshadows one of the most successful meetings in the history of the Society. The list of those who have promised to contribute to the proceedings is made up of the names of representative men in the medical profession of this State, and their scientific contributions cannot be outranked in any medical society in this country.

Inasmuch as the announcement does not appear like a programme, with the order in which the papers will be read, we assume that this arrangement will constitute a part of the labor of the Business Committee. On that assumption we offer a suggestion, which we believe will promote the best interests of the Society, and it is that the contributions of the delegates and the permanent members should receive the preference in the order of the exercises. We have been led to make this remark by the fact that, at the last annual meeting, there was an undercurrent, mild, perhaps, of disapproval of the order which permitted the reading of a contribution in the first morning session, by a gentleman who had not even been made an invited guest. The paper was an excellent contribution, but the regulations and precedents were so warped by the order that it did not look well, to say the least. The experienced Business Committee of this year should be able to arrange this matter so that the rights of the delegates and the permanent members will be adequately protected.

SO-CALLED PURE VEGETABLE REMEDIES.

THERE is a curious superstition in the lay mind that all vegetable remedies are comparatively harmless, while mineral substances are much more injurious to the human economy. This superstition or prejudice in favor of the vegetable kingdom is always skilfully appealed to by the quack, whether he be only an "Indian doctor" or represent the supreme development of charlatanism in the person of a "professor" who gives free lectures to the public on nervous debility, suborning the daily press for his purposes. The prejudice, perhaps, originated some fifty years ago, when the public and the profession began to realize that there was too much giving of antimony and mercury. It always received moral support from the old women who only knew how to brew

herbs and feared what they did not understand. Besides, vegetable medication belongs to the childhood of the human race. The use of mineral drugs is the result of the acquirement of scientific knowledge and the general advance of civilization. It is no wonder, therefore, that it has been regarded with suspicion by the ignorant. But the fact is the prejudice is entirely without foundation. At the present time a list of the poisons used as drugs will show a great preponderance of the vegetable kingdom. We have, for example, such universally consumed substances as alcohol, tea, coffee, and tobacco. These "purely vegetable substances" alone do a hundredfold more to poison and deteriorate the human system than does the whole mineral pharmacopœia. But besides these we have opium, Indian hemp, and the whole seductive list of "purely vegetable" narcotics. By far the most powerful poisons to the system are of purely vegetable origin. Such, for example, is curarin, which produces its effects in doses of $\frac{1}{100000}$ of a grain; and strophanthin, of which a solution containing one part to ten million of water will kill the exposed heart of the frog. The most subtle and evasive of poisons is the active principle of the "purely vegetable" digitalis purpurea, while strychnia has probably poisoned more animals and human beings than any drug but arsenic.

Take it as a rule, therefore, the most violent poisons and the substances that produce the most deleterious effects on the human system are from the vegetable kingdom. The mineral drugs which may cause harm are few in number, and, if we except arsenic, are not especially violent poisons. There is a considerable amount of poisoning from lead, but not through its medicinal use, and the same may be said at the present time of mercury.

In fine, it is the purely vegetable drugs which are the most dangerous, because it is these which stimulate the brain or benumb the senses, induce morbid habits, and eventually establish physical degeneration.

We wish that the public could be made to understand this when it is confronted with alluring notices of the perfect safety and harmlessness of "purely vegetable" drugs.

CONTRIBUTIONS TO LONDON HOSPITALS.

New York considers itself a rich city and generous in its gifts to charitable objects, but it must be confessed that we are poor and provincial compared with what private citizens of England—chiefly London—have done for medical charities. In the past year about twenty-five persons have given donations or left legacies, mostly to London hospitals, to the amount of over two million dollars. One lady alone leaves, in default of her daughter having issue, $450,000 to twenty-odd medical charities in London. A gentleman named Walpole leaves $925,000 to be distributed among a dozen hospitals. A number of others leave sums ranging from $15,000 to $60,000. Yet the London medical press is constantly complaining of the poverty of the hospitals, and extraordinary efforts have of late been made to increase the regular annual contributions, in which the two millions referred to is not included. Is it not quite possible that this hospital work is being overdone? It has a pauperizing effect to eventually persuade well-to-do people to get their medical services free of charge.

THE TREATMENT OF PHTHISIS BY LARGE DOSES OF TANNIN.

The French are most prolific in devising new methods of treating phthisis. No sooner is the medicated gaseous enemata process well established in the hospitals than Drs. Arthaud and Raymond announce something still better, or at least simpler. They began by experimenting on rabbits, in order to find some substance which would render them non-susceptible to inoculations of tuberculous matter. They found tannin to produce some very remarkable results. The Paris correspondent of the *British Medical Journal* writes: "Six rabbits were treated for a month with doses of tannin, varying from fifty centigrammes to one gramme; after two successive inoculations, one with lung-tissue from a patient who had died of acute tuberculosis, the other with miliary tubercle from a hospital patient—no trace of infection was observed, while three other rabbits, to which tannin had not been given, succumbed in consequence of inoculations with the same material. These experiments suggested a mode of treatment which has been adopted with excellent results in over fifty cases. Tannin was given in doses of from two to four grammes a day, and the improvement was visible at the end of a fortnight, the patients had increased in weight, and no relapse occurred. In cases of acute tuberculosis, both in children and adults, it sometimes happens that the symptoms appear less favorable; but, at the end of a week or a fortnight, the patient's condition improves, even when fatal results have been feared. From these experiments the following conclusions may be drawn: (1) That tannin is preferable to sulphur of carbon or iodoform in the treatment of tuberculosis; (2) that animals submitted to this treatment for a month offer great resistance to the action of tubercular virus."

THE REPORT OF THE SURGEON-GENERAL OF THE UNITED STATES ARMY.

The Surgeon-General's report for the year ending June 30, 1886, is one deserving of special attention. The statistics showing the morbidity and mortality of the soldiers are, as usual, most complete, but, in addition, the Surgeon has added a number of scientific contributions from the members of the medical staff, thus giving to the volume an especial value.

The tables given show that the actual number of admissions to sick was 32,990, or 3,839 less than for the preceding year. Compared with the average rate for ten years preceding, the admissions were about one-fifth less. A greater proportion of invalids was furnished by troops under thirty-one years of age, while up to the age of twenty-five the rate proved so much above the mean for the whole army that the Surgeon-General states it may be fairly questioned whether the services rendered by these young men are equal to the cost of their maintenance. Men of Irish birth furnished the highest mortality rate, or 7.9 per 1,000; the English stood next, and the Germans third.

The two worst months of the year were August and January; the healthiest month was April; 184 surgical operations were performed during the year, 37 being consequent upon shot injuries.

The Museum received 436 new specimens during the year, and the total number is 9,583.

The Library received an addition of 10,708 books and pamphlets, making the total number 106,631. The third and last volume of the "Medical and Surgical History of the War" is now in the hands of the printer.

The scientific articles include eight contributions on various topics, and a series of fifteen reports upon aneurism, which, taken together, form an interesting contribution to the subject in question.

PASTEUR AGAIN.

THE experiments of von Frich, of which we give an account elsewhere, are the most damaging arguments against Pasteur's preventive inoculations that have yet been brought forward. If, as now appears probable, the whole of Pasteur's claims are shown to be baseless, and all his inoculation work a mere conjuring with hypodermatic syringes and useless solutions, the collapse will be a tremendous one. Pasteur will have won a world-wide notoriety, secured honors, government appropriations, and thousands of dollars from private individuals, all through the glorification of a little operation which is futile, if not absolutely dangerous. Medical opinion upon Pasteur's work has uniformly been one of expectancy. From the very first it was recognized that his experiments were not demonstrative, nor his conclusions unassailable. The public, however, will be inclined to resent the whole affair as an imposition, if not downright quackery. This view will be natural, but at the same time unjust, for Professor Pasteur is beyond doubt sincere in his beliefs.

HYSTERIA AND THE TUBERCULAR DIATHESIS.

A THEORY has recently been put forward by Dr. Grosset (*Gazetta Medica di Torino*) to the effect that hysteria is frequently but a manifestation of the tubercular diathesis, which may or may not be accompanied by other more evident signs of this affection. A clinical demonstration of such an hypothesis is, of course, out of the question, but the author seeks to prove his theory by the facts obtained from a study of phthisical families. He says, for example, that he has observed families in which one child of tuberculous parents may die of pulmonary phthisis, another may have tubercular meningitis, while a third will perhaps give no evidences of any of the ordinary forms of the affection. But this third child, the author asserts, is only apparently free from the effects of this diathesis; he shows no tubercular trouble, but he is markedly neuropathic, and either becomes hysterical or falls a victim to mental disease. The same individual may also, in later life, acquire some form of tubercular disease. Another fact which Dr. Grosset has observed, and which he regards as confirmatory of his views, is that the children of this hysterical individual, in most cases, become phthisical or betray other evidences of the transmitted tubercular diathesis.

Tuberculosis, he says, is, like all diatheses, an essentially general and constitutional disease, and pulmonary phthisis is one, and only one, of its manifestations, just as neuroses in general, and hysteria in particular, may be another. The affection may declare itself at one time by cerebral symptoms, at another by pulmonary signs, but these various manifestations are expressions of one and the same condition, viz., tuberculosis. This alternation of symptoms between the nervous system and various organs is compared to that observed in other affections, such as typhoid fever, rheumatism, gout, etc.

The author is not very convincing in his arguments, but he may, nevertheless, be making advances in the right direction; and his efforts to solve the mystery of hysteria may give occasion to further investigations which will throw a brighter light on this now obscure subject of the etiology and pathology of hysteria.

THE MICROBE OF SMALL-POX.

SEVERAL observers during the past twenty years have reported that they found micro-organisms in the blood, tissues, and contents of the vesicles in small-pox, but their conclusions have not been entirely satisfactory, owing to faulty methods of research, as well as to the want of unanimity among them. Some of the more recent investigators, indeed, among whom are Klein, Strümpel, Cornil, and Babes, admit that their results are far from conclusive, and affirm that the specific microbe of variola has not yet been isolated.

The latest writer on this subject, however, Dr. A. Marotta, claims to have found the micro-organism which has hitherto eluded the search of other investigators. He has made a series of careful experiments by cultures and inoculations, the report of which is published in the *Revista Clinica e Terapeutica* for November and December, 1886. He found constantly in the lymph of the variolous pustules a special form of microbe which he calls the micrococcus tetragonus. These micrococci are arranged in groups of four, and present somewhat the appearance of sarcinæ. They are readily cultivated in gelatine, agar-agar, coagulated blood-serum, and egg-albumen, but not on potatoes. The colonies are of a clear orange-yellow color, and of rather considerable thickness. Their growth is slow in gelatine, requiring about a month for the complete development, but is more rapid in blood-serum. The liquefaction of the culture medium also takes place slowly, and the reaction, after this has occurred, is intensely alkaline. The medium must be alkaline in order to permit of successful culture experiments.

Inoculation experiments were made upon calves, dogs, and guinea-pigs. Inoculation with the seventh generation of cultures in calves produced pustules identical with those of vaccinia, while the results in the case of dogs and guinea-pigs were negative. Injections into the subcutaneous tissues of these animals gave rise to no suppuration, whence the author concluded that the microbe had nothing in common with pyogenic micrococci.

Dr. Marotta's experiments seem to have been conducted carefully, and with all the precautions necessary to exclude error, and it is safe to conclude that in the cases seen by him there was present in the vesicles a micrococcus tetragonus, but whether he has discovered the specific microbe of variola is another question. Time and further experiments may possibly demonstrate the correctness of his belief.

News of the Week.

THE ALUMNI ASSOCIATION OF THE WOMAN'S HOSPITAL OF THE STATE OF NEW YORK.—This association held a very successful annual meeting at the Academy of Medicine on Wednesday last, at which several interesting papers were read. In the evening Dr. James B. Hunter gave a reception to the members at the University Club. There was a full attendance, and a very enjoyable evening. The association is a unique one of its kind, and its success is an example worthy of imitation.

THE MEDICAL LAW OF INDIANA.—Indiana is a progressive State, and its physicians have of late years taken an active and effective interest in promoting the welfare of the body medical. A registration law has been secured, but, like most of such laws when first enacted, it has some serious defects. One of the most glaring of these is that of the clause which allows the county clerk to issue a license to practice to any physician who files an affidavit stating that he has graduated from a reputable medical college. The clerk is thus made judge of what are the reputable medical colleges in this and other countries. Manifestly he is very unlikely to be competent to decide upon such a point. A question of this character should rest either with a board of medical examiners or with the State Board of Health. Experience has shown that a very good estimate of the real character of our numerous medical institutions is usually made by bodies of this kind. The activity of the Illinois Board of Health, and the vigilant scrutiny of educational measures now kept up by medical journals, have made the task of weeding out the quack institutions comparatively easy.

THE INTERNATIONAL MEDICAL CONGRESS.—The *Berliner Klinische Wochenschrift*, speaking editorially of the International Medical Congress, says that though the foreign guests may not see a complete representation of American medicine, and though the absence of many well-known American physicians may make of the meeting a kind of Rump Parliament, yet there will be many interesting sights and experiences which will amply repay the visitor.

THE FIRST CÆSAREAN SECTION performed in the West, if not in this country, was done by Dr. Richmond, of Indianapolis, by candle-light. So says Dr. W. H. Wishard.

A NEW BACTERIOLOGICAL JOURNAL.—The interest in bacteriological studies has developed most rapidly since the admirable methods of research devised by Koch have been generally adopted, and have commenced to bear fruit. Bacteriological laboratories have been established, during the past two or three years, in the various countries of Europe and in America, and the recent literature of the subject is extensive and rapidly increasing. The fact that this literature is scattered through journals published in several different languages, and that many of these journals are scarcely known to the profession in this country, has made it a matter of difficulty to keep *au courant* with the progress of knowledge in this direction. In future the matter will be greatly simplified, for those who read the German, by the publication of a weekly periodical entitled *Centralblatt für Bacteriologie und Parasitenkunde.* The publisher is Gustav Fischer, of Jena, and the journal is under the editorial management of Dr. Oscar Uhlworm, of Cassel, assisted by Professor Leuckart, of Leipzig, and Dr. Loeffler, the distinguished bacteriologist, of Berlin. The editorial staff of the journal will include a large number of "*Mitarbeiters*," located in all of the countries of the world in which bacteriological studies are pursued. Dr. G. M. Sternberg has been requested to act as "co-laborer" in America, and will forward to the editors, for review, any papers which may be sent to him in which original experimental work of value is recorded. He requests that reprints may be sent to him in duplicate (address, Johns Hopkins University, Baltimore, Md.).

THE FIRST COURSE OF THE MIDDLETON GOLDSMITH LECTURES, under the auspices of the New York Pathological Society, will be delivered at the College of Physicians and Surgeons, corner Twenty-third Street and Fourth Avenue, by M. Allen Starr, M.D., Ph.D., Professor of Nervous Diseases, New York Polyclinic, on "Multiple Neuritis, and its Relations to Peripheral Neuroses." First lecture will be on Tuesday, January 25, 1887, 8 P.M., on the "History of Multiple Neuritis, the Pathology of the Disease, its Varieties and Etiology; Peripheral Neuroses traceable to Neuritis." Second lecture on Friday, January 28, 1887, 8 P.M., on "The Clinical Picture of Multiple Neuritis, Diagnosis of the Disease, Prognosis, and Treatment." Members of the profession cordially invited.

CEREBRAL RHEUMATISM AND THE DEATH OF THE LATE GENERAL LOGAN.—A correspondent, who signs himself "A Country Practitioner," writes as follows: "Will not your recent editorial upon 'The Death of the late General Logan' be calculated, on cursory reading, to form a false impression in the minds of the profession at large regarding the common complications and mortality of rheumatism? It is almost impossible to find it recorded that organic cerebral disease is secondary to acute articular rheumatism, even though it may be—the usual way of fatal termination being by: 1, Cardiac lesions; 2, kidney diseases; 3, hyperpyrexia. Ulcerative endocarditis, pericarditis, and nephritis, all are causes of delirium, stupor, coma, death, whether from an embolus, thrombus, pyæmic or uræmic poisoning, or simple exhaustion from elevated temperature. What I am contending for is the specific complication inducing congestion of the brain as one of its symptoms. It evidently was not congestion that killed General Logan, or paralysis from compression, but the complication behind your generalizing statement is what accomplished the fatal issue, and that is what we wish to know. We will not array our authorities *pro* and *con* the usual causes of death in this disease, but ask the physician lately in attendance to favor us with an elucidation."

THE HOSPITAL SATURDAY AND SUNDAY COLLECTION has reached the sum of $48,000, with the prospect of its amounting eventually to about $52,000.

THE WEEKLY MEDICAL REVIEW.—Dr. Robert Lierking retires from the editorship of this able journal, and is succeeded by Dr. Benjamin J. Primm.

PROFESSOR E. L. YOUMANS, who died on January 19th, was well known as a writer on scientific subjects, the author of a work on chemistry, and the editor of the *Popular Science Monthly*. He did much to popularize scientific subjects, and was an ardent champion of the doctrines of Herbert Spencer.

TOBACCO AND THE CENTENARIANS.—Professor Humphrey's investigation of the physical condition and habits of centenarians shows that out of 15 males 7 smoked much, 1 smoked a little, and 7 did not smoke at all. Among 28 females, 4 smoked much, 1 a little, 1 moderately, and 22 none at all; two used snuff.

AN ITALIAN HOSPITAL IN NEW YORK.—Funds are being raised among the wealthy Italian residents of this city for the purpose of establishing a hospital for Italians.

A REMEDY FOR BALDNESS is said by a correspondent of the *British Medical Journal* to be the daily use of the Granville *per cutem*.

ANTIFEBRIN IN EPILEPSY.—Antifebrin is being extensively used by Professor Dujardin-Beaumetz in epilepsy, on the ground that it is one of the most powerful moderators of the spinal centres. Lépine has used the same drug for the lightening of the pains of locomotor ataxia. The dose is from seven to eight grains.

CREMATION IN NEW YORK does not seem to have been flourishing to any great extent. There is a very fine crematory, but the New York Cremation Society has only contributed two of its members to the flames during the past year. This is not taking up the cause very warmly.

THE BUILDING OF THE COLLEGE OF PHYSICIANS AND SURGEONS, of this city, has been sold to an ice-cream firm, which will take possession next fall.

PROF. VON FRICH'S EXPERIMENTS WITH THE VIRUS OF RABIES.—The Paris correspondent of the *Lancet* writes: "The most important news of the week comes to us from Vienna, in the account of Prof. von Frich's experiments with the virus of rabies supplied to him for that purpose by M. Pasteur. M. von Frich finds: 1. That in animals which have died from rabies the virus exists in its most concentrated form in the central nervous system. 2. That small quantities of the cerebro-spinal substance of animals which have died from rabies, injected under the dura mater by trephining, are sure to be followed, after a latent period of from fourteen to twenty-one days, by the same disease, and this may be transmitted from these to other animals. 3. That the same disease, with the same symptoms and the same period of incubation, may be induced by intracranial inoculation with particles of medulla from human beings who have died of rabies, showing the identity in man and in the lower animals. 4. That infection is less sure by the subcutaneous method, and the period of incubation longer than with intracranial inoculation. 5. The length of the period of incubation depends upon the quantity of virus injected under the skin; the less the virus, the longer the incubation. 6. By the continuous intracranial transmission of the virus taken from the cerebro-spinal substance of rabbits, after a series of generations the period of incubation is shortened and its invasion is irregular. Later on the incubation still decreases, but the invasion becomes regular. 7. The *fixed virus* of an incubation period of seven days, which M. Pasteur obtains by inoculation from rabbit to rabbit through forty or fifty generations, exceeds in intensity the virus of *street rabies*, not only in that the invasion of the disease is earlier, but also because the animals die without exception as well after subcutaneous injection as with inoculation of the dura mater. 8. The fixed virus does not seem to acquire by further transmissions any noteworthy shortening of its period of incubation. Sometimes the disease begins after six days; but, on the other hand, it may extend to eight, ten, or even twelve days. An incubation period of from eight to twelve days, and consequently a virulence of the same intensity as that of the fixed virus, may also be obtained by the transmission of street rabies, and this sometimes at the second or third generation. 9. M. Pasteur's method of obtaining a fixed virus of seven days' incubation is, perhaps, not the only one, for the said virus may sometimes be obtained much earlier, independently of the transmissions, and this virus is constant in its effects and in its period of incubation. 10. The virulence of particles of medulla diminishes daily under desiccation at 20° Centigrade over caustic potash, and is entirely destroyed after from fourteen to sixteen days. 11. Animals which have been subjected to hypodermic injections of a series of virus attenuated by desiccation become refractory to the stronger virus by the previous inoculations with the weaker virus, if the stronger virus have not been used in too rapid succession. 12. Animals which have been inoculated hypodermically during ten days with virus of progressive virulence (medulla from ten days to one day) have not been refractory to infection with the fresh virus of street rabies, and have only exceptionally escaped after intracranial infection. 13. Rabbits and dogs inoculated by trephining with the virus of street rabies of sixteen days' incubation have always succumbed, notwithstanding the preventive treatment already described. 14. M. Pasteur attributed to the method of slow vaccinations the unsatisfactory results obtained previously by M. von Frich, and recommended a more intensive mode of treatment. The experiments carried out conformably to M. Pasteur's instructions have given no more favorable result; all the animals died of rabies. 15. The experiments have demonstrated a most important fact—that is, that in the rapid process the weaker preservative medullæ do not confer the same certainty of immunity from the effects of inoculation with the stronger medullæ. Of a series of dogs and rabbits inoculated as a control-experiment to that described in the preceding paragraph, and in which the rapid process was carried out without previous infection, most of the animals died of rabies. 16. Most of the animals which were submitted to the preventive treatment after subcutaneous inoculation with street rabies died of the disease even when the period of incubation was thirty-four days. These experiments show, says M. von Frich, that Pasteur's method of rendering animals refractory to rabies is not yet either sure or certain. There is not yet a sufficient scientific basis for the application in man of a preventive treatment after the bite of a rabid animal. It is, moreover, quite possible that the preventive treatment, at any rate the intensive method recently recommended by M. Pasteur, may itself transmit the disease.

Reviews and Notices.

A Reference Handbook of the Medical Sciences: Embracing the Entire Range of Scientific and Practical Medicine and Allied Science. By various writers. Illustrated by Chromolithographs and fine Wood Engravings. Edited by Albert H. Buck, M.D., New York City. Volume II. New York: William Wood & Co. 1886.

The second volume of this most complete encyclopædia of medical science embraces all the subjects occurring in alphabetical order from Catarrh to Eye, inclusive. The number of contributors to this one volume is one hundred and five, of whom thirty-four are from New York City, sixteen from Boston, seven from Cincinnati, six from Philadelphia, six from Washington, six from Baltimore, four from Montreal, three from St. Louis, three from New Orleans, three from Chicago, two from Atlanta, two from Albany, two from Brooklyn, and one each from Toronto; Auburn, N. Y.; Dayton, O.; Portland, Me.; Augusta, Ga.; Columbus, O.; Watertown, Mass.; Rochester, N. Y.; Buffalo; Charleston, S. C.; and Princeton, N. J. This is sufficient to demonstrate the truly national character of the work, and a glance at the list of names shows further that the writers of the different articles are for the most part men of more than a national reputation, and are acknowledged authorities in the various departments of medicine to which the subjects treated of by them belong.

The first article is one on Nasal Catarrh; then follow Catechu, Catoosa Springs, Caustics, Cauterets (a French mineral spring), Cauterization, Caxton Springs, Cedar Keys, Celandine, Cells, Disease of the Cellular Tissue, Cephalhæmatoma, etc. Opening the volume at random near the end, we find in regular order, Examination of Recruits, Medical Examiner (a State officer in Massachusetts, having somewhat similar functions to those of a coroner), Excelsior Springs, Neurotic Excoriations, Physical Exercise, Exophthalmic Goitre, Exostoses, Expectorants, Expectoration, Law of Expert Evidence, Principle of Extension as Employed in Surgery, Extra-Uterine Pregnancy, etc. The enumeration of these titles will suffice to show the varied character of the articles contained in the "Handbook." We find here subjects relating to medicine, surgery, obstetrics, legal medicine, health resorts, medicinal springs, materia medica, and, in fact, every branch of medical science. It is safe to say that the physician will find in this book all necessary information on any subject even remotely connected with his professional work, and what the "Encyclopædia Britannica" or Appleton's is to one in quest of information on general subjects, that will be the Reference Handbook to the physician seeking to refresh his memory or to gather new facts in his own particular field of study.

Some of the articles are veritable monographs on the subjects of which they treat, and indeed the only criticism which might be made is that they are too long. It is extremely difficult, it is true, to deal thoroughly with an important subject in a few columns or a few pages, but one does not turn to an encyclopædia with the expectation of finding there all the information that is contained in special treatises. Such a work is, or should be, a depository of facts or of the outlines of a subject, where one can find what is practically useful and no more, but which serves at the same time as a sort of index showing where the student may find, if time permits and inclination prompts, a more exhaustive presentation of the subject. It is fair to state, however, that this criticism applies to but few of the articles contained in this volume, and most of them exactly come up to our idea of what a work of this kind should be. The subject is presented briefly, but with all-sufficient thoroughness, and at the end of the article is a short bibliography containing all the latest and most important special treatises bearing on the matter under consideration. And even with the long articles we have no fault to find except on account of their length. They contain good, sound doctrine, and if one had the time at his disposal he could spend it to no better advantage than in studying them and making himself master of the subjects of which they treat.

We cannot close this brief notice without referring to the illustrations. There are over five hundred wood-cuts in this volume, all of them clear and distinct. They are not thrown in hap-hazard, but have been judiciously selected, and do what illustrations, especially in medical works, do not always do—they really illustrate the text. The large majority are original, and bear about them a refreshing odor of newness. In addition to the wood-cuts, the volume contains six full-page chromolithographs, illustrating the tests for color-blindness, affections of the cornea, dactylitis syphilitica, the plant Cornus florida, Elephantiasis arabum, and the Eucalyptus globulus.

The work is to be completed in eight volumes. It is large octavo in size, beautifully printed on fine paper, and strongly bound. It is a work that commends itself alike to the busy practitioner whose time for study is limited, and to the young physician who, whatever he may himself think, is really fortunate in having many spare hours to devote to study and to a more thorough grounding of himself in the essentials of medical knowledge.

Des Cataractes et de Leurs Opérations. Conférences Cliniques, professées par le Dr. Galezowski, et recueillies par le Dr. Boucher, Médecin-major de 1re classe.—Cataracts and Cataract Operations. By Dr. Galezowski. Paris: A. Delahaye et E. Lecrosnier. 1886.

A series of five chemical lectures by Dr. Galezowski, in which the subject of the different forms of cataract, and of the operations for its cure, is treated in a lucid and instructive manner by this accomplished ophthalmologist.

The Laws of Generation, Sexuality, and Conception. By H. M. Gourrier, M.D. Translated and Edited, with an Introduction and Notes, by Franklin Duane Pierce, M.D. Union Springs, N.Y.: Hygeia Publishing Co. 1886.

In this book the author treats of the laws governing sex in generation, deriving his arguments from a study of reproduction in the lower animals as well as in man. He believes that the sex of the offspring is invariably that of the weaker parent.

The Principles and Practice of Medicine. By the late Charles Hilton Fagge, M.D., F.R.C.P., Physician to and Lecturer on Pathology at Guy's Hospital; Examiner in Medicine in the University of London; Senior Physician to the Evelina Hospital for Sick Children, etc. Including a Section on Cutaneous Diseases by P. H. Pye-Smith, M.D., F.R.C.S., Lecturer on Medicine at Guy's Hospital; Chapters on Cardiac Diseases, by Samuel Wilks, M.D., F.R.S., Physician to Guy's Hospital, and to the Royal Hospital for Children, London; and Complete Indexes, by Robert Edmund Carrington, M.D., Assistant Physician to Guy's Hospital, London. Vol. I. Philadelphia: P. Blakiston, Son & Co. 1886.

In the volume before us Dr. Fagge discusses, under the head of general morbid processes, subjects of such profound importance as contagion, fever, inflammation, tubercle, tumors, and syphilis. The specific diseases such as typhus, typhoid, scarlatina, variola, cholera, erysipelas, and diphtheria come next, and are followed by chapters on the diseases of the nervous system. Diseases of the respiratory system are then fully dealt with, asthma influenza, and whooping being arranged under the common heading of functional disorders of the respiratory organs. Of course this arrangement and classifi-

cation is open to criticism, but it should be borne in mind that at the time of the author's death his manuscript was incomplete as regards this very point. Moreover, no system of classification is perfect, and unless diseases are arranged alphabetically their grouping will always be more or less arbitrary, because reflecting the personal views of the author. If the second volume of this treatise fulfils the promise of excellence contained in the one before us, the entire work cannot fail to find favor with the profession both here and abroad.

La Goutte, sa Nature et son Traitement. Par le Dr. W. Ebstein, Professeur de Médecine et Directeur de la Clinique Médicale à l'Université de Gœttingue. Traduction du Dr. E. Chambard, Ancien Interne des Hôpitaux de Paris. Introduction du Professeur Charcot, Membre de l'Institut. Ouvrage orné de 12 chromolithographies.—Gout, its Nature and Treatment. By Dr. W. Ebstein. Paris: J. Rothschild. 1887.

This is a French translation of Dr. Ebstein's well-known and justly prized work on the nature and treatment of gout. The author dwells principally upon the pathology and morbid anatomy of gout, though the symptomatology and treatment are by no means neglected. The theory of Ebstein concerning the local lesions of gout is, that there is first a limited necrosis of the tissues excited by the presence of acid urates, and later neutral urates are deposited at these points. The text is enriched with twelve finely executed chromolithographs. By reason of the excellent typographical execution, fine paper, and unusually substantial binding, the work before us might almost be called an *édition de luxe*.

The Curability of Insanity: A Series of Studies. By Pliny Earle, A.M., M.D., late Superintendent of the State Lunatic Hospital at Northampton, Mass. Philadelphia: J. B. Lippincott & Co., 1887. Pp. 232.

This volume is essentially the reprint of a series of papers the first of which appeared in 1876 and the last in 1885. These papers are unquestionably sound, exhibiting as they do, in the light of the best obtainable statistics, the entire subject of the curability of insanity. That the theme is important to the last degree in a country where mental disorders are ever on the increase requires no insistance. Even those who are not specially interested in psychological matters will derive much useful instruction from a perusal of this little volume.

The International Encyclopædia of Surgery: A Systematic Treatise on the Theory and Practice of Surgery by Authors of various Nations, edited by John Ashhurst, Jr., M.D., Professor of Clinical Surgery in the University of Pennsylvania. Illustrated with chromolithographs and wood-cuts. In six volumes. Vol. VI. Pp. 1272. New York: William Wood & Co. 1886.

The sixth and last volume of this great work fittingly brings to conclusion the most important surgical publication issued within the memory of the present generation of surgeons. It is not too much to say that the editor and his collaborators, both here and abroad, and that the publishers as well, have placed the profession under lasting obligations for the great care and fidelity with which they have executed their several tasks.

The present volume contains the concluding articles on the injuries and diseases of the various regions of the body, and also supplies numbers of articles necessarily omitted from previous volumes, owing to the inability of the writers to complete them in time for insertion in their appropriate places. The surgery of the alimentary canal is completed by articles on the œsophagus from the pen of Dr. J. Solis-Cohen, on intestinal obstruction by Dr. Ashhurst, and on injuries and diseases of the rectum by Dr. Allingham. Dr. Keyes contributes an elaborate article on urinary calculus, which is further supplemented by a brief special article on lithotrity from the pen of the veteran lithotritist of Montreal, Professor Hingston. Dr. Reginald Harrison discusses the surgery of the bladder and prostate, Professor Duplay, of Paris, that of the male urethra, and Mr. Royes Bell, of London, that of the male organs of generation.

The female generative apparatus is considered in three articles contributed by Drs. Parvin, R. P. Harris, and Charles C. Lee, who wrote respectively on injuries and diseases of the female genitals, Cæsarean section and allied operations, and uterine and ovarian tumors.

The remaining articles are on inflammatory affections of the bones, by Professor Ollier, of Lyons; structural diseases of the bones, by Professor Vincent, of Lyons; tumors of the bones, by Professor Poncet, also of Lyons; and a special contribution on orthopædic surgery, by Dr. F. R. Fisher, of London.

An appendix contains interesting and instructive articles on the construction and organization of hospitals, by Edward Cowles, of Somerville, Mass.; the preparations of military surgeons for field duties, including the modern system of ambulance service, by Dr. B. A. Clements, U.S.A., and a brief, yet sufficiently comprehensive, review of the history of surgery, by Dr. George J. Fisher, of Sing Sing, N. Y.

An excellent general index, prepared by Dr. H. R. Wharton, ends the volume.

A Handbook of Hygiene and Sanitary Science. By George Wilson, M.A., M.D., F.R.S.E. Sixth edition. 8vo, pp. 520. Philadelphia: Blakiston & Co. 1886.

Wilson's Handbook has achieved a decided success, and has for some time been recognized as a standard text-book. The present edition calls for no extended comment therefore, since its merits are acknowledged. The editor has added considerable material, however, and has made his book still more representative of the present state of sanitary science. The additions consist of a description of the several diseases which render the flesh of animals unfit for food, a completion of the chapter on water-analysis, a short section on sewage and effluents, a new chapter on soils and localities, a separate chapter on disinfection, besides correction and remodelling of other portions of the work.

A Treatise on Electrolysis and its Applications to Therapeutical and Surgical Treatment in Disease. By Robert Amory, A.M., M.D. (Harv.). New York: William Wood & Co. 1886. Wood's Library of Standard Medical Authors.

We welcome the publication of works tending to place the use of electricity in medicine upon a clearer and more scientific basis than that which it occupies at present. The very limited education in physics, which unfortunately too many practitioners have, as well as the progress of that science in late years, has tended to becloud the art of electro-therapeutics; and it remains, to a large extent, mere empiricism. Dr. Amory's book will be of service in giving physicians an opportunity to learn the latest views regarding many points in electro-physiology. His first chapter is devoted to a description of the nature of electrolysis, by which we understand is meant the chemical relations of electricity to the human body. The author then describes the batteries used, the laws of resistance and diffusion of electrical currents, and the methods of applying them to the body. With Chapter VI. begins the practical application of electrolysis in disease. The number of diseases for which electrochemical effects are used is now quite large. Dr. Amory describes the use of electricity in aneurisms, ulcers, tumors, Basedow's disease, hypertrichosis, urethral strictures, extra-uterine fœtation, etc. The book is illustrated with a considerable number of very excellent wood-cuts.

Reports of Societies.

THE PRACTITIONERS' SOCIETY OF NEW YORK.

Stated Meeting, January 7, 1887.

GEORGE F. SHRADY, M.D., PRESIDENT, IN THE CHAIR.

FIBROUS ANCHYLOSIS AT THE SHOULDER-JOINT—RECOVERY.

DR. V. P. GIBNEY presented a man who, without known cause, began to suffer from pains in his left shoulder. At times previous to May, 1885, he had had what he regarded as rheumatic pains. During the summer of that year the pains about the shoulder were aggravated by such movements as abduction and extension. There was no pain when the limb was at rest. The rotation was about one-half the normal, and he could abduct the arm to an angle of 45° without tilting the scapula.

Early in September Dr. Gibney put the patient under the influence of ether, moved the joint in all directions freely, and determined to employ passive motion himself daily. He continued this until September 23d, when the result was so unsatisfactory that he repeated the *brisement force* about one month later. The after-treatment in this instance consisted of rest and the application of fomentations for about ten days, when he resorted to massage and the use of the Paquelin cautery. At the end of a week the suffering of the patient had been increased, and his shoulder was much stiffer than when treatment was begun. During the next three months he did nothing in the way of treatment, suffered little or no pain, and at the end of that time his arm was more useful, the arc of motion was increased, and there was neither atrophy nor shortening, nor infiltration. Now, nearly a year after the patient first came under Dr. Gibney's observation, the functions of the shoulder were perfect, and this result was not due to any particular mode of treatment. Whether the forced movements to which Dr. Gibney subjected the patient conduced to the good result, he was unable to say.

THE PRESIDENT then read a paper [see p. 85] entitled

THE CURABILITY OF CANCER BY OPERATION.

DR. J. D. BRYANT opened the discussion, and said that he had not studied directly concerning the length of time that had elapsed between the date of the operation and the date of recurrence. It had occurred to him, however, to reason upon the subject before the Society somewhat in the following manner: Cancer is either a constitutional disease or it depends upon a constitutional condition, or else it is a local disease depending very largely upon irritating causes. He had been accustomed to regard it very much as he had tuberculosis; not exactly a local, nor precisely a constitutional disease, but rather a disease that depends upon vulnerability of the tissues, one tissue being more vulnerable than another, the uterus or breast of one woman being more exposed than that of another, or responding to irritation more readily.

But whether local or constitutional, the only rational means of effecting the cure of cancer was by operative procedure. When considering the question of treatment the inquiry should arise: How does the disease cause death? It may do so directly by its extension, or by establishing a cachexia, or by absorption of poisonous material from the growth, or by the pain and depressing influence upon the patient's mind. This view of the case should teach the surgeon to operate early, and often. He had no question but that the best results would be obtained in cancer by operating before any of the surrounding tissues became involved—even the tissues lying in contact with the mass of disease.

Moreover, antiseptic surgery, which obviates the process of suppuration, will increase the favorable results.

But the answer to the question of operative procedure varies largely according to the part of the body in which the disease is situated. He could recall three cases of malignant disease of the parotid, in two of which he felt satisfied that the length of the patients' lives would have been increased had he avoided operating for its removal; in one case, however, he was sure that life was prolonged considerably. He also referred to a case of multiple sarcoma in Bellevue Hospital, where he removed seventeen nodular masses, and prolonged the patient's life.

He had had two cases of malignant disease of the lip, on which he operated, and the disease had not yet returned, though distant four and six years respectively from the date of the operation. On the other hand, he had in mind a case in which he cut the lip away freely, and a short time after the operation the malignant disease developed in the submaxillary gland, which he removed, and soon afterwards in the opposite gland, and after the removal of the last growth the return of the disease was very rapid.

But by operating early and often and under antiseptic precautions, he believed with Dr. Shrady that the percentage of recoveries for malignant disease could be increased, and also that life could be prolonged.

DR. C. C. LEE concurred in what Dr. Bryant had said, not having had the pleasure of listening to the paper of the evening; that is to say, resort should be had to excision in cases of malignant disease under ordinary conditions, and at as early a stage as possible. In cases of disseminated cancer, it always becomes a question whether or not all the disease can be removed. In cancer of the uterus or vagina, or both, he advised early operation, except when the neighboring lymphatic glands were involved.

DR. R. F. WEIR agreed with the opinion of many that cancer is a local disease, and he looked favorably upon the theory that it was of germ origin. Entertaining these views, he could but agree with Dr. Shrady and the gentlemen who had spoken that, to obtain the best results, resort must be had to early operation. Not only should surgeons perform operations early, but they should teach their patients that they should be operated on early.

The surgeon should operate not only early, but widely from the diseased part.

Since the advent of antiseptic surgery, which permitted the surgeon to operate much more thoroughly and extensively than before its coming, statistics, amounting in the aggregate to 700 breast cases, gave a recovery, lasting more than three years, in ten per cent.

It was the fact that the surgeon could operate widely from the diseased part that had made lip-operations so satisfactory, and in six hundred cases, recovery, lasting more than three years, took place in twenty-nine per cent.

Amputation of the penis for cancer had also given good results, and so had amputation of limbs for cancerous disease.

In these four classes of cases the best results had been obtained, and the great reason was because the operations had been performed wide of the disease. But on account of anatomical reasons, it is impossible to cut wide of the disease in cancer of the tongue, etc., and this fact is the most discouraging feature of such cases.

DR. W. T. BULL was quite in accord with what had been said concerning the necessity for early, as well as very radical, operations. He had been struck by the fact that in breast cases the patients come very late indeed for operation.

He believed that exploratory incision, especially in the early stage of breast tumors, deserved more general mention and adoption than it thus far had received. Probably, in nearly fifty out of sixty cases, the tumor ex-

ists a year before going to a surgeon for advice, and all this time the case is under the observation of the general practitioner, who hesitates to recommend an operation until sure of his diagnosis, and this lapse of time is to the patient's detriment.

Dr. Bull had adopted the exploratory incision in three cases, and it had been extremely satisfactory. If the diagnosis cannot be made with the unaided eye, the microscope can be used. In cases of suspicious ulcer of the tongue, and of disease of the uterus, the exploratory incision can be very readily practised, and very much precious time in the early stage of a malignant affection be saved.

As an illustration of radical operation for cancer, he mentioned a case in which he removed the entire uterus two and a half years ago, and there had not been any recurrence of the disease. He believed that similar radical operations were not resorted to with sufficient frequency by those who perform surgical operations.

He also thought that it was rather exceptional to remove the skin thoroughly enough, and examine the axilla with sufficient care, in breast cases. With regard to the axilla, an examination of it through the skin was entirely inadequate. In every case of cancerous disease of the breast the contents of the axilla should invariably be removed as a part of the operation, and all of the adjacent tissues examined in the most thorough and extensive manner.

Dr. Weir remarked that the operation should be particularly conducted to the examination and removal of the most distant glands.

Dr. Bull further remarked that he had, during the last three years, given arsenic to nearly every patient upon whom he had operated for cancer, but had not been able to discover that it produced any effect whatever on the disease.

Dr. W. M. Polk said, concerning the use of internal remedies, that his experience coincided with Dr. Bull's. He had used various substances extensively, but without any evidence that they were beneficial.

There was one point that he had noticed in connection with operative procedure; that is, he had occasionally seen a case of cancer of the breast, in an elderly person, that was pursuing a slow course, had been in existence several years, and that without producing a very threatening effect upon the general health of the patient, but in which an operation had seemed to act as a stimulant, and immediately thereafter the disease had progressed rapidly to a fatal termination.

With regard to operation for cancer of the uterus, surgeons had been deterred from operating widely on account of the liability of encountering the ureters. He had operated in six cases, and had become satisfied that he would have done better had he gone further into the surrounding tissues than he did. In one case he demonstrated that he could have gone safely three-fourths of an inch upon each side further into the surrounding parts, and hereafter he should feel disposed to be somewhat bolder in this respect than he had been heretofore.

Dr. A. H. Smith had had the case of a woman, sixty or seventy years of age, under observation nearly three years, where the question of operation had been constantly pressing upon him. The disease in the breast had progressed exceedingly slow, and there apparently remained a chance of the patient getting a number of years of life. He thought it was probable that the result would have been different had the patient been operated upon. The disease began at about the age of sixty.

Dr. Bull said it was a generally recognized fact that scirrhus beginning at that time of life had better be let alone.

Dr. Samuel Sexton had, at one time, been specially interested in examining proofs of death in cases of life insurance, and had noticed that in nearly all cases of death from cancer there had been the history of one or more deaths from consumption in the family.

Dr. W. M. Carpenter spoke on invitation, and said that the case mentioned by Dr. Smith brought to his mind one that he saw with an eminent surgeon in London, who advised extirpation, and then turned and asked if that was not good surgery, and if it was not what New York surgeons would advise. The answer was that, to the best of his knowledge at that time, an operation would not be advised by most New York surgeons, and that it would not be regarded as good surgery to operate in such cases. The patient was a thin old woman, who had a flat tumor in one of her breasts that was not giving rise to any symptoms, and had progressed so slowly that several years had been consumed in reaching its present condition.

Dr. Carpenter also referred to a case which he saw in consultation, and assisted at the operation for removal of the cancerous breast July 29, 1876. The specimen was examined microscopically by Dr. Francis Delafield, who diagnosticated cancer beginning in the milk-ducts. The nodule was about an inch and a half in diameter, was painful and increasing in size, was not attached to the skin, and there were no enlarged glands, although at the operation several axillary glands were removed. The patient was about forty years old, and is still living, and in the enjoyment of her usual degree of health.

On the other hand, he saw in August last a patient, much enfeebled in health, about forty years of age, who had a lump in one of her breasts, about an inch in diameter, that had remained stationary for about two months. She was told not to give herself any anxiety concerning it; but her friends were told to watch it with the utmost care. It was not attached to the skin; there were no glandular enlargements that could be detected, and it had not been painful.. The patient was advised to let the nodule completely alone, and to make sure that it was not pressed upon by her clothes. At the end of three months the report was that it had disappeared entirely.

The occasional occurrence of such cases doubtless had contributed much toward causing patients to postpone seeking surgical advice, and also had deterred many surgeons from operating as early as they should have done.

He regarded it as safest for the patient, however, to advise the earliest possible and most thorough ablation of every breast that contained a suspicious new-growth, which began at an age under sixty years.

To illustrate the necessity of operating widely, he referred to a case in which he examined microscopically a breast that was removed by Dr. T. M. Markoe. A little oblong body at considerable distance from the breast was selected, with other portions, on the supposition that it was an enlarged lymphatic gland. On examination of the sections, however, it was found that it was only a lobule of fat, but in the meshes of it could be seen distinctly occasional cells that presented the same appearance as those found in the alveoli in the cancerous mass in the breast.

Dr. Shrady, in closing the discussion, said that the main object of his paper was to enforce the necessity of early operation in cancer, and to persuade general practitioners to consult surgeons in such cases early enough to give the patient the best possible chance to get cured. Of course, it should be taken for granted that he would operate, not only as early, but as widely as possible, and he would remove all adjacent glands, even though they might be apparently healthy. With reference to the dissemination of cancer, he was in the habit, several years ago, of taking sections from specimens presented at the New York Pathological Society, and examining them with the microscope, and often at the edges of the incision he had found cancer-cells in an active state of proliferation and nests that had been cut through. Of course the results after these operations could not be compared with what could now be obtained in the same class of cases.

He had not said anything concerning the use of caustics, because they are useful chiefly in cases of superficial cancer, and also because it was his purpose to speak of operative procedures chiefly. Similar remarks were applicable to the use of internal remedies. He had used arsenic, but without special benefit. The best effects after operations had been produced by giving tonics.

Dr. R. F. Weir then read a paper (see p. 88) on

A NEW METHOD FOR DETERMINING WHETHER OR NOT RUPTURE OF THE BLADDER HAS OCCURRED.

Dr. E. D. Hudson, Jr., presented

A VERY LARGE-SIZED GALL-STONE,

removed, post-mortem, by Dr. Satterthwaite from the jejunum of the late Dr. Darken, who died with well-marked, although at no time violent, symptoms of intestinal obstruction. His abdomen was not distended, nor was it tender on palpation. He had never had an attack of jaundice or biliary colic. The calculus was so large that it occluded the gut entirely. On examination of the gall-bladder it was evident from its thickened walls and pouch-like formation, and also the configuration of the calculus, that the stone had occupied this cavity, and that ulceration at the most dependent portion of the bladder had taken place, which allowed the large body to escape into the duodenum, from whence it passed onward and produced complete obstruction in the jejunum. The liver was apparently normal. Dr. Hudson thought this was an instance in which surgery might have saved the patient.

FATAL INTESTINAL OBSTRUCTION FROM A GALL-STONE.

Dr. W. T. Bull presented a similar specimen, which measured in its three diameters 7.84, 4.3, and 3.9 centimetres and weighed sixty grammes. It was composed of cholesterine and bile-pigment, with a thin crust of lime salts. No nucleus was seen, but the material was concentrically arranged. It was presented to him by Dr. Frank W. Murray, of New York, who saw the patient twenty-four hours before death. The patient, a man seventy-eight years of age, who died after six days' illness, characterized by constant vomiting of dark-green fluid without marked pain or abdominal swelling or tenderness. On the day before death Dr. Murray felt distinctly a freely movable tumor just below the umbilicus, but the general condition of the patient forbade an exploration. Twice during the illness the bowels responded to cathartics. The stone was found firmly impacted in the ileum about three feet from the ileo-cæcal valve. Ten years before death the patient was ill three weeks with vomiting, pain in the stomach and right side of the abdomen, and jaundice, and several similar but less severe attacks occurred subsequently.

The specimen was of interest on account of its size, and the fact that it formed a tumor appreciable to touch—a fact which has not been observed in other cases, according to Treves. Had it been discovered earlier it could have been removed by a simple operation, and the obstruction relieved. Only a hasty examination was possible, and the gall-bladder was not examined, but probably would have shown signs of the ulcerative process by which these stones usually escape into the duodenum.

In a recent article on the subject by Wising (referred to in the *Medical News*, October 9, 1886), the writer analyzes 51 cases, of which 38 ended fatally. In only 5 cases was a tumor perceptible. Laparotomy was performed in 4 cases with fatal result. In the same number of the journal Evans reports a case in which a calculus two and a half inches long was passed after inflating the bowel for twenty minutes.

Dr. Hudson mentioned a case in which there was a history of repeated attacks of hepatic colic, and Dr. Wylie made an exploratory incision, but no gall-stones were found. He also presented two specimens of what Murchison had named

PEPPERCORN GALL-STONES.

They were removed from the bodies of patients who died at the Colored Home, and no well-formed calculi were found other than these exceedingly small ones, of which there was a very large number. Murchison had suggested that these fine calculi probably came from the hepatic duct.

The Society then adjourned.

Correspondence.

OUR LONDON LETTER.

(From our Special Correspondent.)

THE HARVEIAN LECTURES ON CANCER OF THE UTERUS—THE TREATMENT OF MENTAL DISEASES—PARISH INFIRMARIES AS FIELDS OF CLINICAL STUDY—THE DEGREE QUESTION.

London, January 4, 1887.

Dr. John Williams, in his recent Harveian Lectures on "Cancer of the Uterus," ran counter to some commonly received doctrines. Dividing the uterus into three parts, viz.: (1) the vaginal portion, (2) the cervix proper, (3) the body and fundus, he premised that, by cancer of any one of these parts, he meant cancer originating in that part, and not cancer invading it from another source. Cancer of the vaginal portion was then considered in detail. Injury to the cervix has been by many considered as a frequent precursor of malignant disease in that part, and as disposing to it. Erosion, it has been thought, might, in subjects predisposed to malignant disease, eventually become cancerous in nature. The researches of Ruge and Veit have been regarded as confirming this conclusion. Dr. John Williams, however, maintained that there was no evidence that, so far as regarded cancer of the vaginal portion, laceration played any part in its causation. He had never found it to start from a a tear of the cervix. Neither did he think childbearing had much to do with the disease. Out of eight cases five had had less than the average number of children, and in no one had labor been severe. In three cases the patients had had no children. He remarked that the cancerous portio vaginalis might be quite smooth and seem fairly healthy, with perhaps slight lividity of the surface. It might, on the other hand, be papillary, tuberculated, or granular. In three cases there was simply enlargement of the lips.

Why should not mental diseases be treated at our general hospitals? Such is the plea put forward by a well-known alienist, Dr. Rayner, in a recent number of *The Times*. Such a plan is doubtless beset with difficulties, but these are not insuperable, and the adoption of it would remove a blot from our present treatment of the insane. In many of our large public asylums, probably, much is done to ameliorate the condition of the patients, and a certain proportion of the inmates are, after a stay of varying length, discharged as cured. Can as much be said for our private asylums? The private asylum system offers no inducement whatever to the physician in charge to endeavor to effect cures. He is generally either the proprietor, or has at least a share in the institution. It is therefore to his pecuniary interest to receive as many patients as he can, and to keep them as long as he can. As a sagacious mental attendant remarked to me a month or two ago, the removal from a large asylum of a private patient, whose relatives are paying four or five hundred pounds a year for him, means the loss of a sum sufficient to pay the butcher's bill. Under such circumstances, he remarked, was it likely the doctor would lose a patient if he could help it? Obviously not. The private asylum system in England is virtually doomed. Although the abuses and

cruelties of a by-gone generation have been removed, and the proprietors and physicians of private asylums are mostly educated and humane men, still they can't be expected to take a keen interest in "treatment," which, if successful, will empty their establishments and deplete their pockets. It has been wisely said that all private asylums should be converted into public institutions, and a resident physician appointed to each at a liberal salary, fixed independently of the number of inmates. Then, and only then, can scientific treatment of the insane be expected on an adequate scale. A medical man who is also a part proprietor of the asylum can scarcely, however disinterested he may be, give the same time and attention to the subject as one in the position indicated.

Another subject which has again been to the fore, of late, is the utilization of the vast amount of clinical material at present running to waste in our workhouse infirmaries. This desirable result has been brought about in one of the metropolitan parish infirmaries. At the Paddington Infirmary, during the autumn months, the wards were thrown open to the students of St. Mary's Hospital, while the latter institution was temporarily closed for repairs. Some members of the hospital staff also attended at the infirmary to give clinical instruction. In most London parishes the infirmary is now a distinct building from the workhouse, and is in many cases an imposing edifice of brick and stone, rivalling in magnitude some of the large hospitals. With regard to the sanitary arrangements, those of the parish infirmaries are superior to many of those in hospitals, as the former buildings have in many cases the advantage of being modern and constructed in accordance with approved ideas of sanitation. It is easy to understand that in an infirmary containing from three to four hundred in-patients, much clinical material of value is to be found. But before this can be utilized, leave must be obtained from the "guardians of the poor." I know of at least one parochial infirmary, where the resident medical superintendent was anxious to utilize the clinical material at hand for teaching purposes, but the guardians ruthlessly put a stop to his plans.

The movement in favor of the two colleges obtaining powers to grant a degree, gathers head. At the adjourned meeting, at the College of Physicians, very decided progress was made, and a resolution, "that an application be made to the Crown by the Royal College of Physicians of London, and the Royal College of Surgeons of England, acting conjointly, for power to confer degrees in medicine and surgery," was carried without a dissentient. Professor Latham, of Cambridge, acknowledged his conversion to the scheme, among the supporters of which, at the recent meeting, were also to be found Dr. Priestley and Sir William Gull. The latter coolly proposed that the new degree should be called M.D. Lond., and that the graduates of the present university in London should rename their degree, M.D. Univ. Lond. We have heard of M.D. Albert University, and of M.D. Westminster, but to deliberately appropriate the title now given by another university is a piece of audacity worthy only of Sir William Gull.

INTUBATION OF THE LARYNX.

To the Editor of The Medical Record.

Sir: Dr. Northrup's article in The Medical Record of December 11, 1886, on "Laryngeal Diphtheria, Intubation," etc., contains statements that suggested the following questions, which the writer hopes may prove pertinent. They are asked in a genuine spirit of inquiry, and are not polemic, in so far as intention goes, at least.

Dr. Northrup, in his record of post-mortems, neglects, for the most part, to mention whether the subjects had died after intubation.

As his article stands, information on this point is apparently lacking—only mentioning the obductions of seven infants, on whom he himself had performed intubation.

Now, with intubation the average physician would naturally fear that aliment taken into the mouth and attempted to be swallowed, or the stomach's contents, through vomiting, would be in danger of gaining access, through the tube, to the middle and lower air-passages. In case this happened, what would be the result? Orth says, speaking of suppurative pneumonia: "The severest type of this inflammation is that produced by the aspiration of food, vomit, blood, etc.—the so-called 'schluck pneumonia,' *i.e.*, gulped or swallowed pneumonia. It is, in its nature, a catarrhal broncho-pneumonia; but the exciting cause may and does occasion a malignant or septic form of this disease. Yes, under certain conditions, it may become gangrene—gangrena diffusa. The presence of food in the bronchi one may easily recognize with the naked eye, or by the sour smell of vomit. A certain result is likewise given by a microscopic examination of the bronchial and alveolar contents" (Orth's Comp. der Path.-Anat., Diagnostic seite, 214). Had Dr. Northrup explained whether or not the conditions described above had been found, would it not have settled a very grave doubt in the minds of some of the gentlemen who read his article? Next, how do large plaques of exfoliated membrane escape through the tube? What does Dr. Northrup say of this? Scarcely anything. In one place, he speaks of a large membrane engaging the lower aperture of the tube, and the expiratory efforts causing it to be projected across the room. In another place, he says: "You may think best to remove the tube at some time, because the child *swallows badly*, or because it secretes an unusual amount of tenacious mucus, or because, for any reason, you desire to give it a good opportunity to use its larynx to give more explosive force to the cough. The chances are that as you remove it, there will follow a large piece of false membrane, or a quantity of mucus, and you will be pleased at your judgment in advising it." This is about all he does say on this point. The question still maintains, How can a mass of exfoliated membrane pass this artificial mediate that would possibly occlude the normal larynx itself? The following annulæ ○ ○ represent the normal calibre of the largest and smallest sizes, respectively 12 years to 1 year of O'Dwyer's tubes, a light glance at which must make one sceptical as to the possibility of a large exfoliated placque of pseudo-membrane gaining exit through even the larger, to say nothing of the smaller one. Dr. Northrup himself asserts that it takes more time and skill to remove the tube than it does to insert it. In case a blockage occurred, would not the patient's life be seriously threatened, before the tube could be removed, under the most favorable circumstances? And suppose there were no skilled one near to remove the tube?

Surely, none can say that tubage offers the certain ex of compromising materials that the tracheal section gives and the technique of this operation has been improved to meet almost any emergency in this line. In regard to his statistics, there are 165 cases quoted as intubated—twenty-eight and one-half per cent. recovering.

No information is given in regard to the character of the respiratory ailment in the larger number of these cases. True, from the caption of his article, one may (*cum grano salis*) suppose they had laryngeal diphtheria; but the diversified character, both of his informatio and the general dissonance of opinion on the subject of diphtheria and membranous croup, makes the doubt of them all being bona fide cases of diphtheria a serious question. Admitting they were, still it would not in measurably eclipse the results of tracheotomy. Henoch out of 66 cases of laryngeal diphtheria, saved by tracheotomy 16—a per cent. of $24\frac{8}{33}$; and, he apologizes for the mortality by stating that they were hospital cases. As far as authenticity is concerned, comment is superfluous.

Dr. Northrup, in one section of his article, upon h

own authority, makes the statement "that there is never any ulceration of the cords; but slight ulceration may be produced by the head and lower end of the tube, when retained for a long time. *This can do no harm.* Koenig thinks it necessary to say considerable on the subject of these self-same ulcers that *can do no harm.* He says: "Little children are especially in danger from this so-called 'ulcus decubitus trachealis;' and since it happened to me that a child which had recovered from diphtheria died of a lethal hæmorrhage into the trachea from such an ulcer, since that, I say, I am always fearful of this complication. The most prominent symptoms of this trouble are the occurrence, in the later stages, of renewed small hæmorrhages, renewal of fever, and the acquirement of an unhealthy appearance in the tracheal wound." Again, he speaks of little tumors that appear on the mucous membrane of the larynx and trachea, following cannulization of the trachea. Of these, "they are small granulation tumors—true granuloma." Their history is still somewhat new, and their mention in literature is small. Koch has collected from literature 26 cases; outside of this, there might be mentioned a dozen observations. But if one should conclude that this number represents its real frequency, then one would certainly reckon widely too little.

We believe that there scarcely exists a surgeon, who has had many tracheotomies who has not had one or more such cases. Whether it was recognized or not, is another question. He further says that these tumors are likely to appear anywhere that the tube has exercised the least pressure, and calls attention to von Trendelenberg's observation of the tendency of the mucous membrane of the trachea and larynx to take on a granular inflammation,—particularly the membrane within the thyroid and cricoid cartilages. "These granulomes are of various forms and conditions, sometimes pedunculated in form of polypi; again, warty or velvety, and spread over much surface. They sometimes appear early in the case (five days, Körte), generally later, ten to fourteen days; and it seems that the longer the cannula remains, the greater is the disposition for their recurrence. Or they may not appear until long after the tracheal wound is healed, and produce a chronic 'status asphyxiosus.' Koenig lost a patient from this cause three years after it had recovered from a tracheotomy" (Koenig, "Spec. Chir.," s. 695 u. 699). True, the sophism may be produced that all of this comes of the tracheal tubage, and not of the laryngeal; but the gentleman *does mention* that ulceration *has occurred*, even in the small number of cases now on record. Mark the insidious dangers that Koenig attributes to these ulcers that "*can do no harm.*" Ditto, the tendency of the mucosa of larynx and trachea, by pressure of foreign bodies, to take on a granular degeneration process (von Trendelenberg). Also Dr. Northrup recommends the largest tube that can be conveniently inserted.

I will not allude to other pros and cons that would only be prolix and unique, but hasten to the doctor's question: "Now, does it leave the patient without any of the advantages offered by tracheotomy?" It is to be regretted that the doctor did not attempt to establish limitations for the measure, instead of factoring dogmas of inquiry. For a true friend to the operation can but see injury in a too enthusiastic advocacy of it. Physicians, with all degrees of ability, will rush in, believing and promising all, and, because it does not accomplish all, will not recognize or be grateful for the good it may do—they eventually becoming sceptical, even enemies of the measure.

In fact, from the commotion and favor it is occasioning, both among the laity and profession, you may have a repetition of some such inglorious failure as that which happened in the early history of the transfusion of blood. "For when blood was first transfused from animals, the enthusiasm of its reception was indescribable. The tuberculous should be immeasurably improved, the transfunded one would be given new life, and be converted to the bliss of health. In time of war, herds of sheep should follow the army for the certain weal of the wounded; but too soon came the truth, and the good with the bad went to the ground, in status exodus lethalis" (Albert R. von Mosetig-Moorhof).

Dr. Northrup's anatomy, pathology, technique, and clinical history are certainly excellent, and should deserve him a place in the history of the operation. "Do you, however, if you will be persuaded by me, pay little attention to Socrates, but much more to the truth—taking good care that in his zeal he does not deceive both himself and you, and, like a bee, depart, leaving his sting behind."

Closing, I modestly mention a few suggestions. Carl Hueter says it is much easier to reach the laryngeal orifice of young children than of older ones, by reason of the very short distance between the oral and laryngeal openings of the first. I think the tube might possibly be used, instead of von Trendelenberg's apparatus, in large operations in the upper air-passages, by connecting a soft-rubber tube above the shoulder of the incubating tube—the rubber tube extending out through the mouth, and to the end of which Trendelenberg's inhaler or Junker's apparatus might be attached, and against the possibility of blood entering the trachea between the tube and larynx a cotton tamponade could be placed, after the method of Czerny.

Another use which might be made of it would be that of a guide for the various trocar instruments, such as Hanke's, used for quick and bloodless tracheotomies, or paracentesis trachealis. It would probably do away with the two greatest dangers of that class of instruments—*i.e.*, the danger of the instrument gliding into the paratracheal region, or the greater one, of the point of the instrument by pressure approximating the anterior wall of the trachea to the posterior, thereby penetrating both, and wounding the œsophagus—an almost certain result in the tender, flexible tracheas of infants; also avoiding the danger of pushing before the instrument the loosened mucus or false membranes, and thus forming a valve that would obstruct the breathing. All this looks as if it might be prevented by passing the point of the instrument down on the intubator tube.

Respectfully submitted,

A. R. JENKINS, M.D.

HENDERSON, KY., December 22, 1886.

SOME FURTHER POINTS CONCERNING INTUBATION.

TO THE EDITOR OF THE MEDICAL RECORD.

SIR: Please permit me, through the columns of THE RECORD, to suggest to those who are about to purchase an intubating apparatus, and others who have one and who have not had any practice with it, that the much-abused common yellow dog—young one—if good for nothing else, is an excellent subject to practice on. For several reasons which are very apparent, he makes a better subject that the cadaver. He will be all the more servicable if etherized. A block of wood will answer for a mouth-gag. Some practice upon either of the above subjects should be had before attempting intubation upon a child.

BUCHANAN KLOPHEL, M.D.

MEMPHIS, TENN.

CONGENITAL ABNORMAL ANUS.

TO THE EDITOR OF THE MEDICAL RECORD.

SIR: In THE MEDICAL RECORD of the 25th inst., p. 707, under the head, "A Curious Malformation of the Rectum," is a communication from Dr. Frederick T. Simpson, of Hartford, Conn., who writes: "A variety of malformation of the rectum, not described by Holmes, Gross, Erichsen, or other authors, so far as I have read, has recently come under my observation. It consisted in a prolongation of the rectum, beyond its usual termination at the anus, across the perineum to the posterior

border of the scrotum. It was attached by its upper surface to the median raphé, and presented a small orifice at its termination, through which meconium escaped in small quantities, by dint of considerable straining on the part of the child." The interesting case of Dr. Simpson, described above, is, however, neither unique nor rare, as I will proceed to show. It belongs to the fifth species of the congenital malformations of the rectum and anus, according to my classification of them. In my treatise on these congenital defects, published by Samuel S. & William Wood in 1860, p. 53, I define the fifth species as follows: "In this species the rectum terminates externally by an abnormal anus, located in some unnatural situation, as at some point in the sacral region, or the rectum is prolonged in the form of a fistulous sinus, or pipe-like passage, and terminates by an abnormal anus at the glans penis, the labia pudendi, or at different points in the perineum. The natural anus being absent, its functions are more or less imperfectly performed by the abnormal one."

I also, on page 200 of the same work, make the following remarks: "These adventitious canals of the rectum differ from the ordinary fistulous passages only by being more perfectly organized, and by being entirely free from induration. They remind me very much of the fistulous sinus which the rectum, in order to relieve itself, sometimes sends off from beyond a permanent stricture of that intestine when the contraction exists a few inches above the anus. They may be regarded in the character of supplementary conduits, and cannot be considered as either an arrest of development, or as an excess of development, but as a purely pathological formation."

The treatment of this species of malformation consists in either establishing an artificial anus, in the natural situation, or of enlarging the abnormal outlet, if sufficiently near the normal site of the anus. The treatment is simple enough, and most always attended with success, provided the other requisites of life are present.

I have recorded thirty-six cases of the fifth species, and those from among them which are similar to and most resemble the case of Dr. Simpson are the following:

Durr, a physician of Augsburg in 1668, relates the case of a male child brought to him, having an imperforate anus, in which the membrane that closed the anus was prolonged forward to the anterior part of the perineum, in which was a small opening through which the meconium was drained off. He incised this membrane up to the natural place of the anus, and ultimately completed the cure.

Dieffenbach, in 1845, observed this elongation of the rectum in two male children. In one the small opening was formed in the posterior part of the scrotum.

Friedberg, of Berlin, in 1852, reports an interesting case of a male child with an imperforate anus, with a small opening in the posterior wall of the scrotum, and through which a little meconium passed when the child made violent straining efforts. Mr. Holmes, one of Dr. Simpson's authors, in his valuable work on the "Surgical Treatment of the Diseases of Infancy and Childhood," p. 168, refers to my report of this very case of Friedberg. These cases will all be found reported in full in the sixth chapter of my treatise previously named.

A similar case to Dr. Simpson's was communicated to me in a letter in July, 1861, by Dr. R. G. Levis, Surgeon to the Philadelphia Hospital, on which he operated successfully.

Mr. Green, in the "Indian Annals of Medical Science," vol. v., reports the case of a male child, presenting an imperforate anus, with an abnormal opening in the perineum, just behind the scrotum.

Mr. Goyrand reports two interesting cases of this species in *Gazette Médicale de Paris*, tome xi., p. 510, 1856.

Mr. Curling names several cases of this species in his valuable article on "The Congenital Imperfections of the Rectum," in the "Medico-Chirurgical Transactions," vol. xxv., p. 271, London, 1860.

Mr. Cripps also reports cases of this species in an able production on "The Imperforate Rectum and Anus in Infants," in "Saint Bartholomew's Hospital Reports," vol. xviii., p. 65, London, 1882.

I will close by presenting the following summary, which will give the number of cases, and other particulars of this species, as recorded by me:

Cases, 36 (males, 14; females, 13; sex not given, 9); treated, 24; successful, 21; unsuccessful, 3; not treated, 12.

Yours, etc.,

WILLIAM BODENHAMER, M.D.

249 MADISON AVENUE, NEW YORK, December 30, 1886.

Army News.

Official List of Changes in the Stations and Duties of Officers serving in the Medical Department, United States Army, from January 9 to January 15, 1887.

BAILY, JOS. C., Lieutenant-Colonel and Assistant Medical Purveyor. Ordered from Department of the East to New York City, to take charge of the Medical Purveying Depôt in that city, relieving Captain Henry Johnson, Medical Storekeeper, from duty as acting Assistant Medical Purveyor. S. O. 9, A. G. O., January 12, 1887.

BROWN, HARVEY E., Major and Surgeon. Granted leave of absence for six months on surgeon's certificate of disability, with permission to leave the Division of the Missouri. S. O. 9, A. G. O., January 12, 1887.

CORSON, J. K., Captain and Assistant Surgeon. Ordered to Fort Cœur d'Alène, I. T. S. O. 227, Department of Colorado, December 31, 1886.

MUNN, C. E., Captain and Assistant Surgeon. Ordered to Fort Canby, W. T. S. O. 227, Department of Colorado, December 31, 1886.

BANISTER, J. M., First Lieutenant and Assistant Surgeon. Ordered to Fort Cœur d'Alène, I. T. S. O. 227, Department of Colorado, December 31, 1886.

BARNETT, RICHARDS, Captain and Assistant Surgeon. Leave of absence further extended six months on account of sickness. S. O. 9, A. G. O., January 12, 1887.

WILSON, GEO. F., First Lieutenant and Assistant Surgeon. Leave of absence extended twenty days. S. O. 9, A. G. O., January 12, 1887.

Medical Items.

CONTAGIOUS DISEASES—WEEKLY STATEMENT.—Report of cases and deaths from contagious diseases reported to the Sanitary Bureau, Health Department, for the week ending January 15, 1887:

	Cases.	Deaths
Typhus fever	0	0
Typhoid fever	12	8
Scarlet fever	45	6
Cerebro-spinal meningitis	6	6
Measles	641	72
Diphtheria	111	41
Small-pox	5	0
Yellow fever	0	0

MEDICAL SOCIETY OF THE STATE OF NEW YORK.—The following are some of the papers to be read at the next annual meeting of the Society, to be held in Albany February 1st, 2d, and 3d: "A Plea for the Intra-uterine Medication," by Paul F. Mundé, M.D., of New York; "Separation and Displacement of the Upper Epiphysis of the Humerus in a Child two weeks old, caused by Violence," by William C. Wey, M.D., of Elmira; "Pa

oxysmal Cardiac Dyspnœa," by A. L. Loomis, M.D., of New York; "The Radical Cure of Reducible and Irreducible Herniæ, touching on the Advantage of the High Removal of the Sac and the Wound being Dressed openly to Secure a firm compressive Cicatrix," by R. F. Weir, M.D., of New York (discussion to be opened by A. Vander Veer, M.D.); "Observations on Reflex Nervous Disturbances," by W. E. Ford, M.D., of Utica; "The Influence of Small Doses of Salts of Lime and Potash on Muscle, Cardiac and Skeletal," by Sidney Ringer, M.D., of London, honorary member of the Society; "Is the Danger of Post-partum Hemorrhage increased by the Use of Anæsthetics during Parturition?" and "Remarks on Antiseptic Midwifery," by Fordyce Barker, M.D., of New York; "Remarks on the Indiscriminate Use of Pessaries," by J. W. Whitbeck, M.D., of Rochester; "The Therapeutic Uses of Bismuth," by F. A. Castle, M.D., of New York; "Is Modern Midwifery Meddlesome?" by David Little, M.D., of Rochester; "Some Important Points in the Management of Deep Urethral Stricture," by F. N. Otis, M.D., of New York; "Necessity for Complete Removal of Uterine Appendages whenever Operation is Called for," by A. Vander Veer, M.D., of Albany (discussion by Mr. Lawson Tait, F.R.C.S., honorary member of the Society, of London; and by W. Gill Wylie, M.D.); "Treatment of Membranous Croup" and "Peritonitis of the Infant," by A. Jacobi, M.D., of New York; "The Clinical Significance of Cardiac Murmurs," by Wesley M. Carpenter, M.D., of New York (discussion to be opened by A. L. Loomis, M.D.); "On a Case of Dislocation of the Head of the Left Femur under the Pubic Arch," by J. S. Wight, M.D., of Brooklyn; "On the Supposed Virus of the Chancroid," by F. R. Sturgis, M.D., of New York (discussion to be opened by F. N. Otis, M.D.); "Correction of the Deformity termed Pug-nose by a Simple Operation," by John O. Roe, M.D., of Rochester; "Surgery of the Lungs," by Roswell Park, M.D., of Buffalo (discussion to be opened by R. F. Weir, M.D.); (Subject to be announced), by C. R. Agnew, M.D., of New York; "Cascara Sagrada," by A. Hutchins, M.D., of Brooklyn; "Intubation of the Larynx," by E. L. Partridge, M.D., of New York; "Demonstration on the Cadaver of the Method of Intubation of the Larynx," by J. O'Dwyer, M.D., of New York; "An Unusual Method of ridding the Male Bladder of Small Calculi—with Case," by A. Dann, M.D., of Rochester; "The Duty of the Medical Profession in Promoting Cremation," by Sir T. Spencer Wells (honorary member of the Society), of London (discussion to be opened by A. Jacobi, M.D.); "Diagnostic Areas of the Human Chest," by J. R. Leaming, M.D., of New York; (Subject to be announced), by Alfred Mercer, M.D., of Syracuse; "Tobacco Amblyopia," by H. Bendell, M.D., of Albany (discussion to be opened by D. B. St. John Roosa, M.D.); "Practical Observations on Abdominal Surgery," by W. Gill Wylie, M.D., of New York; "Irregularities of Septum Narium as an Etiological Factor in Nasal Catarrh," by F. W. Hinkel, M.D., of Buffalo; (Subject to be announced), by George H. Fox, M.D., of New York; "The Duration of the Syphilogenic Capacity in Relation to Marriage," by P. A. Morrow, M.D., of New York; "The Management of Certain Forms of Varo-equinus," by A. M. Phelps, M.D., of Chateaugay (discussion to be opened by V. P. Gibney, M.D.); "An Unusual Form of Diphtheritic Paralysis," by Laurence Johnson, M.D., of New York; "The Palliative Treatment of Cancer of the Uterus in its Later Stages," by A. F. Currier, M.D., of New York; "Perineorrhaphy," by W. W. Potter, M.D., of Buffalo; "Physiology of Menstruation," by Bache McE. Emmet, M.D., of New York; (Subject to be announced), by William Hailes, M.D., of Albany; "External Urethrotomy," by L. B. Bangs, M.D., of New York; "The Intoxicant Habit," by H. R. Hopkins, M.D., of Buffalo (discussion to be opened by William C. Wey, M.D.); "Transfusion of Saline and Saccharine Solutions in Cases of Extreme Exhaustion," by Joseph W. Howe, M.D., of New York; "Some Points of Medico-legal Interest in the Scientific Investigation of the Case of the People *vs.* Roxalana Druse, together with an Exhibition of Specimens representing the *Corpus Delicti*," by A. Walter Suiter, M.D., of Herkimer; "Questions in Nutrition," by E. V. Stoddard, M.D., of Rochester; "A Plea for a More Careful Investigation of the Urine in Infants and Young Children," by L. E. Holt, M.D., of New York; "Tests for an Antiseptic" and "Two Cases of Transplantation without Pedicle from Arm to Eyelid," by Lucien Howe, M.D., of Buffalo; "Report on Ninth and Tenth Series of One Hundred Consecutive Cataract Extractions performed according to Von Graefe's Method," by H. Knapp, M.D., of New York; "Details of Antiseptic Treatment in Emergencies and Private Practice, with Practical Demonstration of Methods," by A. G. Gerster, M.D., of New York; "The Relation of Laryngeal to Pulmonary Phthisis and the Importance of Local Treatment," by C. C. Rice, M.D., of New York; "The Obstetrical Experience of a Country Practitioner," by J. V. Kendall, M.D., of Baldwinsville; (Subject to be announced), by L. Duncan Bulkley, M.D., of New York; "A New Means of Treatment of Disease of the Frontal Sinus," by D. H. Goodwillie, M.D., of New York. The preceding list comprises all of the papers offered for the meeting up to January 7th. It is probable that other valuable articles will be presented. A resolution will be introduced at the opening session, limiting readers of papers to twenty minutes. When in excess of this time, articles should be read in abstract. Many readers fail to impress the Society, because they are unfamiliar with their manuscripts, or cannot be heard except by a few of the members present. The following gentlemen have been selected to act as the Business Committee of the Society: F. A. Castle, M.D., 55 East Fifty-second Street, New York; Laurence Johnson, M.D., 363 West Twenty-eighth Street, New York; Archibald Dann, M.D., Rochester. For information about the foregoing papers, or others not yet announced, address the Chairman of the Business Committee. All physicians wishing to attend the meeting of the New York State Medical Society, to be held at Albany, February 1st, 2d, and 3d, are informed that the New York Central Railroad Company have kindly consented to issue excursion tickets at the rate of a fare and a half, $4.65, the regular rate being $6.20. It is the intention of the majority of the delegation to go to Albany, January 31st, at 3.30 P.M. If a sufficient number can be obtained for that train a drawing-room car will be furnished for their exclusive use. Drawing-room fare, $1. All gentlemen who can arrange to go on that day and train are asked to notify the Secretary of the Delegation, Dr. Clarence C. Rice, 115 East Eighteenth Street, on or before January 25, 1887. Certificates for tickets can also be had by application to him.

WAR AS A THERAPEUTIC AGENT.—Montaigne relates that Jason Phereus, being given up by his physicians for an abscess in his chest, and wishing to make an end of his life, threw himself headlong into a battle in the midst of his enemies. He received a wound through the body which emptied his abscess, so that it healed and he recovered.

THE BEST WAY FOR THE DOCTOR TO PROVE HIS SKILL.—A writer in London *Truth* says: "A doctor may very easily make a fair reputation and a good deal of money without much knowledge of medicine; for this reason, that the science of medicine is a closed book to the vulgar. When a man dies, none of his friends (unless there chance to be a coroner's inquest) know in the least degree what killed him. And if you call in some great medical gun at the last moment, the great medical gun is sure (indeed, I believe by the etiquette of the profession he is bound) to tell you that your doctor has 'treated the case most judiciously.' On the other hand,

when a sick man gets well, no one knows what cured him, and the doctor—who was, perhaps, on the wrong track throughout—gets all the credit. Thus, the best—indeed, almost the only—way in which a doctor can convince his patients that he is wise and knowing in his profession, is by showing them that he is a clever and well-informed man out of his profession. Of his science as a doctor they are not in a position to judge; but if he talks sensibly about subjects which they do understand—stocks and shares, and pictures, and last night's debate in Parliament, and has fair luck with his cases—then his patients will trust and swear by him. I remember one very sad illustration of the injury which a doctor does himself who drops behind in his general information."

The Difference Between American and German Scientists' Meetings.—At the monthly meeting of the Society of Natural Sciences, held at the Buffalo Medical College Building recently, Dr. Julius Pohlman read a paper on the German Association of Naturalists and Physicians, to the meeting of which at Berlin he was sent by the American Association for the Advancement of Science, at its session in Buffalo last summer. "The two bodies," he says, "differ about as much as the average go-ahead American differs from the easy-going, conservative German, who fully believes in the philosophy of rest and recreation. While in the American Association success is estimated by the number of papers presented, the main point with the Germans is to have a good time, and scientific work is of secondary importance. The constitution of the German Association is a curiosity in its simplicity, and its eighteen paragraphs hardly fill one small octavo sheet; by-laws do not exist at all." The association has existed since 1822, and has held fifty-nine annual meetings, having been prevented five times from meeting by war or epidemic. The association devotes its time largely to medical research, and of the thirty sections which compose it, nineteen are for the advancement of different branches of medicine. Though the organization is of the loosest possible, there is no doubt of its permanency; its very age shows that of itself.

The Blood-Corpuscles and the Liver.—In health, as is now well known, the effete red corpuscles are broken down in the liver, a great diminution occurring in the number of corpuscles found in the portal vein—a diminution which, during active digestion, is often as great as from 1,000,000 to 2,000,000. The effete hæmoglobin thus brought to the liver is, under ordinary circumstances, converted into pigment and urea; and, as the recent experiments of Dr. Noel Paton show, any increase of hæmolytic action results in an increased formation of urea and an increased amount of pigment in the urine.—C. H. Ralfe, in *The Lancet.*

Endemic Idiopathic Bubo.—Dr. E. Mory, surgeon to the Dutch cruiser Atjeh, in Curaçoa, describes what he thinks to be a hitherto unrecognized morbid condition, which he calls "bubo-adenitis idiopathica endemica." He saw eighteen cases, all but one occurring in European new-comers, aged from eighteen to thirty-five. The disease developed itself, always rather acutely, in the course of three or four days, and consisted in the appearance of hard, painful, and very tender swelling of the inguinal lymphatic glands on one or both sides, the size of the tumor varying from that of a hen's egg to that of a man's fist. The swelling was accompanied by general malaise, slight fever (100° to 103° Fahr.), loss of appetite, and constipation. As a rule, the patients (sailors) remained disabled for about four weeks, then the swelling decreased, and pain was felt only after prolonged standing or walking. A complete resolution, however, was not observed in any of the patients up to the date of the article (for six months). Local therapeutic measures (iodine, mercurial ointment, iodoform, collodion, blisters, Goulard's water, cataplasms, massage, injection of a two per cent. solution of carbolic acid or ergotin) remained entirely useless. General means (salicyl, quinine, regulation of the bowels, absolute rest, light laxatives) only improved the constitutional state of the patients. Dr. Mory thinks that the disease in question is caused by an infection with the microbe of elephantiasis.—*British Medical Journal.*

The New Cure for Profanity.—A correspondent who is a "country doctor" has evidently been thinking a great deal upon the vaunted merits of anacardium, one of the homœopathic remedies for profanity. He calls attention to the fact that an item giving points in the use of this remedy appeared some time ago (September 4, 1885) in The Medical Record. The author of the original article, a contributor in a homœopathic journal, stated that one of the provings of anacardium was to induce profanity, but he recommended its use only in those cases in which the habit was a symptom of mental disease and not of loose morals. Anacardium, said this writer, cured a minister of the habit. Another remedy mentioned was nitric acid—we presume in very small quantities. We thus condense our correspondent's letter, and merely give his conclusions: "Most of my patients are attacked suddenly, and the paroxysms are very severe. The disease is apt to become chronic, however, if the cause is more or less persistent. An esteemed patient of mine drifted into this form by persisting in using a stylographic pen. I did not know of the new medicine at that time, and so had no opportunity of trying its continuous effect. Although this new remedy may be efficacious in mild cases, where the causes are trivial, in the severe paroxysms I can imagine it would be of small account. In the latter the case assumes that of a pronounced mental reflex, and, for the time being, appears to be incurable. The most marked example of suddenness of attack was in a clergyman who struck the bridge of his nose plump against the edge of a door in the dark room. He was for the time being entirely unconscious of his ejaculations. I have placed him under the remedy, and with a little care in avoiding the cause he has a promise of recovering his mental equilibrium. Another example of this paroxysmal mental reflex was in the person of a mild-mannered bank clerk who stubbed his toe during a moonlight stroll on an irregular plank-walk. This man refused to take the medicine until his toe felt better, so I had no opportunity for testing its merits. While it is always best to remove and prevent the cause of profanity, it is well to treat all patients who are predisposed to the disease by a continous course of medication up to the point of saturation. If this can be done it is not impossible, perhaps, for the patient to smile complacently when left by his train, or bless his stars when he slips on a banana peel."

Urticaria from Cow's Milk.—Dr. S. S. Cartwright writes that Dr. S. W. Reed, of Margaretville, N. Y., has a little patient, seven years old, in whom the use of cow's milk always produces an eruption of urticaria. Some four or five years ago he ordered milk for her, and, though told of the idiosyncrasy, insisted that she should take it. She did so, and was soon covered with an eruption of urticaria. A few days ago he ordered a poultice of bread and milk for a swelling on the child's neck, and in less than two hours an eruption of urticaria covered the neck and entire side of the face.

Musical Discrimination in a Dog.—Dr. W. H. Walshe says that he once saw a dog who invariably uttered a heart-rending howl when the note F sharp of the fifth line of the treble clef was struck on the piano. He had seen him rouse up out of apparent sleep at the sound. The animal proved, under repeated trials, perfectly indifferent to the semitone above and below the note, to its octaves, and, in fact, to all other notes.

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Original Articles.

THE VALUE OF QUININE AS AN ANTIPYRETIC IN PNEUMONIA.[1]

BY JOHN H. RIPLEY, M.D.,

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IN 1877, assisted by my lamented house-physician at St. Francis Hospital, the late Dr. Frank A. Langworthy, I made a number of experiments in order to test the value of quinine as a remedy in pneumonia, with especial reference to its alleged power to control the temperature. These experiments have since been added to, under my direction, by my successive house-physicians, Drs. C. M. Cauldwell, John Dorning, Frank E. Miller, M. L. Warrin, Arot Spence, and Horace B. Sweetser. This paper is based, principally, on forty-eight experiments, although a much larger number has been made; but, from various defects, the others have not been considered, though giving substantially the same results. The plan pursued was as follows: The drug was given as early as possible after the onset of the disease, and was tested in those cases only having a temperature of at least 103° F. The unmodified course of the disease was uniformly watched for several hours preceding the experiment. An effort was also made to obtain uncomplicated cases. The quinine, when administered by the mouth, was nearly always given in solution. The temperature was always taken in the rectum, the thermometer kept in the bowel three minutes for each record, and no change of thermometers allowed during any one experiment. No experiment lasted less than four hours, and a majority of them from six to twelve hours. In the earlier cases the temperature was taken every fifteen minutes; but as this proved to be a most laborious, as well as unnecessary, task, the intervals were subsequently prolonged so as to make the records half-hourly or hourly. The effects of the drug on the respiration and pulse were noted in about two-thirds of the cases, and certain other phenomena were also observed, to be referred to later on. The time of day of administration varied, but when a single dose only was given during twenty-four hours, the morning was generally selected, as it gave a longer period for observation; still, all parts of the day were represented. The patients were nearly all adult males, from nineteen to forty-five years of age. There was one child, a girl, five years of age, that took a number of large doses hypodermically. In 20 experiments a single dose of twenty grains of the sulphate in solution, by the mouth, was given; in 5, thirty grains; in 3, thirty grains daily in five-grain doses every two hours; in 2, thirty-five grains in the same way; in 8, forty grains at a single dose, by the mouth; in 3, twenty grains hypodermically; in 3, fifteen grains hypodermically; in 3, ten grains hypodermically; and in 1, eight grains hypodermically. Results: In 1 case a reduction of temperature amounting to 4° took place after a dose of forty grains by the mouth, and in the child the temperature fell 3½° five hours after a hypodermic injection of fifteen grains, this having been preceded by one of ten grains five hours before the second. There are 5 instances of a reduction of from 2 1/10° to 2½°. There are 23 experiments showing a reduction of from 1° to 1½°. There are 14 showing a reduction of less than 1°. There are 2 showing no reduction, and 2 with a slight elevation. The reduction here noted is the lowest point reached at any time during the observation. It was always of short duration, generally only a fraction of an hour.

There was no uniformity either in the time at which, after the drug was given, the temperature began to fall, or in the *duration* of the fall. In a large number of cases a slight lowering took place within fifteen minutes after giving the quinine, while in others it began in from half an hour to three hours. The time between the beginning of the fall and the commencement of the permanent rise was from two to ten hours—the longer duration was very exceptional. Neither was the statement of Jürgensen verified, that "the line of descent and subsequent elevation is very nearly straight." The temperature, even when taken every fifteen minutes, was found constantly varying, at one time a fraction of a degree lower, and then again higher, with, in a few cases, a lowering tendency.

The effect on the pulse and respiration, as to frequency, was neither consonant nor uniform; both were generally slowed, the pulse more often than the respiration—sometimes one was hurried and the other retarded. The impression made on the pulse and respiration was not a constant guide to that produced on the temperature.

Of the six instances mentioned above, in which the temperature was reduced over 2°, there was, pretty clearly, malarial poisoning in four, and in one the experiment was made on the seventh day of the disease, and the temperature never rose again after the recession, although no more quinine was given. Excluding these cases as not being fairly illustrative, the greatest reduction obtained was one and a fraction degree, except in a single instance. Practically, then, so far as we can judge from these experiments, the most that can be expected of from twenty to forty grains of quinine, administered daily to patients in the active stage of acute lobar pneumonia, is, that it will reduce the temperature between 1° and 2° F. in about half the cases, while in the other half the reduction will amount to less than 1°. When we add to this statement the fact that the lowest points reached are not even approximately held with certainty more than two to four hours, the results appear even less striking. It is not improbable, also, that in a number of instances the effect of the drug was apparent only, as such recessions of temperature occur, during the course of pneumonias, in the absence of all medical treatment.

That quinine is a feeble and uncertain antipyretic in pneumonia, is the conclusion arrived at from an analysis of the foregoing experiments. But this is not the only argument against its use. Contrasted with its inefficiency as an antifebrile are some marked deleterious effects on the digestive, circulatory, and nervous systems. When given by the stomach, even in moderate doses, if frequently repeated, it soon produces anorexia and nausea. In larger doses it not infrequently excites violent retching and vomiting, and prolonged intolerance of food and stimulants. Marked cardiac weakness, lasting several hours, and sometimes associated with dicrotic pulse, generally followed the maximum dose in these cases. Profuse, often cold, perspiration was another effect, taking place in from one to two hours after giving

[1] Read at the meeting of the New York Academy of Medicine, January 20, 1887.

the quinine. Epistaxis occurred in about twelve per cent. of the cases. Profound nervous depression, somnolence, delirium, muscular twitchings and tremblings, dilated pupils, and in two instances opisthotonos, were some of the results on the nervous system. In three cases the urine was examined both chemically and microscopically, before and after the ingestion of the larger dose of quinine. Chemically, albumen was much increased in quantity after the quinine in one case, and there also appeared in this specimen renal mucus and hyaline casts not present before.

These injurious effects of the drug more than counterbalance, in my opinion, whatever of good may be derived from its slight temporary reduction of fever. I cannot find in the history of these cases any evidence supporting the theory that it either shortens the course of the disease or lessens the mortality. Frank, uncomplicated cases have run the usual course in spite of it; while in other cases, portions of the affected lung hitherto unaffected, as also parts of the opposite sound lung, have become inflamed while the patient was under the full influence of it. I believe, also, that too much importance has, of late, been attached to the necessity of reducing temperatures, especially those of moderate degree. It is a matter of daily observation that patients with slowly resolving pneumonias, or with typhoid or typhus fever, bear such temperatures for weeks and still make good recoveries. Certainly, in the case of typhus and typhoid fevers, of which we have had, during the last few years, a very large number in the hospital, the mortality has been markedly less since we abandoned the former heroic measures for reducing temperature. Why should it be deemed necessary, then, in the case of ordinary pneumonia running a short course, to ply the patient with antipyretics?

That quinine given in pneumonia has any influence in arresting cell-migration may well be doubted. The crude experiments made on lower animals and reptiles seem to me to fall far short of a demonstration that the same effect will follow the introduction of the remedy into the system of man, by any of the ordinary methods of administration. In order to produce this inhibitory effect, Brunton says it would be necessary to give a full-grown man from forty-five to sixty grains. Of course this dose must be repeated every few hours, in order to continue our control over these little wanderers. It is unnecessary to say that this treatment could not be carried out. But leucocytes constitute only a small part of the exudates in pneumonia, and, granting that they all come by transudation, not much would be gained by their suppression. Much more would a remedy against them be indicated at a later stage in the disease, or even in a purulent bronchitis.

In conclusion, I believe that large doses of quinine should be abandoned in the treatment of pneumonia. If an antipyretic be indicated, we have in antipyrine, or even salicylate of soda, a remedy more certain, more powerful, and less injurious.

Forty-eight Experimental Cases of the Value of Quinine as an Antipyretic in Pneumonia.

No. of experiment.	Disease.	Temperature.	Amount, form, and method of giving drug.	Length of time observed.	Results on temperature.
1	Pneumonia, double	104⅘ degrees	20 grains, in solution, per orem	4¾ hours	Greatest reduction, ⅕ degrees lower.
2	" "	104⅘ "	20 " " "	7¾ "	" " 7/10 " "
3	" left	104⅘ "	20 " " "	8 "	" " ½ " "
4	" "	104⅖ "	20 " " "	11 "	" " 2⅖ " "
5	" right	105⅖ "	20 " " "	9 "	" " 1 " "
6	" "	106⅘ "	30 " " "	7 "	" " 1⅗ " "
7	" " pleuro-	103⅖ "	30 " " "	10 "	" " 2 1/10 " "
8	" " "	102⅘ "	30 " wafers "	10 "	" " 1/10 " "
9	" left	104⅗ "	30 grains, daily (5 grains every two hours)	8 days	" " 1 " "
10	" right	104⅖ "	30 " " " " "	3 "	No " 1 " higher.
11	" right pleuro-	104⅖ "	30 " " " " "	4 "	Greatest " 1⅖ " lower.
12	" " "	104⅘ "	35 " " " " "	10 hours	No " ⅘ " higher.
13	" " "	104⅘ "	20 grains, in solution, per orem	7¾ "	Greatest " 7/10 " lower.
14	" right	103 "	35 grains daily (5 grains every two hours)	3 days	" " 1 " daily.
15	" "	105¾ "	20 grains, in solution, per orem.	9¾ hours	" " ⅖ " lower.
16	" "	106⅗ "	30 " " "	7 "	" " 1⅗ " "
17	" "	103⅘ "	40 " " "	5 "	" " ⅘ " "
18	" "	103⅘ "	20 " " "	4 "	" " 2⅘ " "
19	" "	104⅘ "	20 " " "	6¾ "	" " 1⅘ " "
20	" "	104 "	20 " " "	6 "	" " 1⅘ " "
21	" "	104 "	20 " " "	9 "	" " 1 " "
22	" double	104⅘ "	20 " " "	4 "	" " 3 " "
23	" "	104 "	20 " " "	8 "	" " 1⅘ " "
24	" "	100⅘ "	20 " " "	6 "	" " 0 " "
25	" " pleuro-	104⅘ "	40 " " "	9 "	" " ⅘ " "
26	" left "	106 "	40 " capsules, "	7 "	" " 4 " "
27	" " "	103⅘ "	40 " " "	8¾ "	" " 2⅘ " "
28	" "	104⅘ "	20 " solution, "	7 "	" " 0 " "
29	" "	105⅘ "	40 " " "	9 "	" " 1⅘ " "
30	" " pleuro-	104⅘ "	40 " " "	5 "	" " 2⅕ " "
31	" double	105 "	40 " " "	9 "	" " 1 " "
32	" right	104⅕ "	40 " " "	9 "	" " ⅘ " "
33	" left	104 "	30 " " "	8 "	" " 1⅕ " "
34	" right pleuro-	104⅘ "	20 " " "	6¾ "	" " 1⅕ " "
35	" " "	103⅕ "	20 " " "	8 "	" " 1⅕ " "
36	" right	103 "	20 " " "	8 "	" " ⅕ " "
37	" double	104⅕ "	20 grains hypodermically	7 "	" " 1 " "
38	" "	104⅗ "	10 " "	5 "	" " 1 " "
39	" "	103⅗ "	15 " "	7 "	" " 3⅗ " "
40	" "	104⅗ "	8 " "	7 "	" " 1⅗ " "
41	" "	104 "	10 " "	7 "	" " ⅗ " "
42	" "	103 "	15 " "	13 "	" " ⅗ " "
43	" "	103¾ "	10 " "	9 "	" " ¾ " "
44	" "	104 "	15 " "	12 "	" " 1⅗ " "
45	" right	105⅕ "	20 " "	4 "	" " ⅕ " "
46	" "	105⅘ "	20 " "	6 "	" " 1⅘ " "
47	" "	104 9/10 "	20 grains, in solution, per orem	10¾ "	" " 1⅕ " "
48	" "	103 "	20 " " "	10¾ "	" " 1 " "

28 to 44 inclusive a child five years old.

COCAINE IN CIRCUMCISION.—Dr. Charles Milne, of this city, seems, at present accounts, to have been the first to use cocaine in this operation, antedating the cases referred to in a recent issue of THE RECORD. The case was one of hypospadias in a child two and a half months old, the operation being for the removal of the prepuce which was on the upper surface of the penis. An injection of eight minims of a four per cent. solution of cocaine was made into the prepuce, and the mass was removed without pain. The operation was performed on December 3, 1884, and was reported by Dr. W. O. Moore in a paper read before the New York County Medical Society on December 23d of the same year.

DEFORMITIES OF THE NASAL SEPTUM.

A New Operation for their Correction, with an Analysis of its Results in One Hundred and Sixty-six Cases, as Throwing New Light on the Pathology of Diseases of the Upper Air-tract and their Relation to the so-called Nasal Reflexes.[1]

By F. H. BOSWORTH, M.D.,

NEW YORK.

During the past two years I have operated upon a large number of cases of deformity of the nasal septum, in which the results of the operation have presented so many points of interest that I have felt myself justified in bringing them before you to-night, not only as demonstrating an unusually successful method of dealing with a very large proportion of cases of ordinary catarrhal disease of the nasal passages, but, which is of far greater interest, as throwing much light on the pathology and development of so-called "nasal catarrh," and its relation to diseases of the lower air-passages.

I purposely avoid repeating the very extensive observations which have been made by various writers, and the large statistics which have been compiled showing the frequency and character of septal deformities as the result of the study of skulls. From an ethnological point of view, possibly, they possess a certain amount of interest; from a clinical point of view I cannot but think the observations are deceptive, being made on the dry skull, in which the cartilages are entirely absent, and the vomer probably warped in the process of drying. Observations on the living subject and dead-house study certainly give us results of far greater accuracy. Classifications based on this method of study have been made by numerous and careful writers, which, in general, may be described as classifications based on the direction and extent of the deflected portion, as involving the cartilage alone, or the cartilage and vomer together, and as presenting ridges horizontal or vertical in direction. These observations, as made by Chassaignac,[2] Jurasz,[3] Löwenberg,[4] Jarvis,[5] John Mackenzie,[6] Gleitzmann,[7] and others, are undoubtedly correct. My own observations, however, lead me to think that there is a large number of cases of nasal obstruction due to deformities in the septum which cannot properly be classed as deflections. I would suggest, then, as covering the ground, a classification as follows: Deflection of the cartilaginous septum alone, in which we have the cartilage bent upon itself, as it were, and presenting a more or less obtuse angle in one or the other nostril, in which the projecting ridge in the majority of cases is vertical. Second, very rarely we have a deflection confined to the cartilage in which the projecting ridge approaches to the horizontal line. Third, perhaps the most frequent of the class of cases of genuine deflection is that in which the whole of the nasal septum, including both the cartilage and the bone, is bent to one or the other side, forming a ridge in which the projecting edge runs from before backward and upward. Fourth, still more rarely we find cases in which the cartilage is bent to one side, while the vomer is deflected to the opposite side, forming, as it were, a sigmoid flexure, producing obstruction in both sides. This classification is not a novel one, and in general is the one adopted by most writers. In addition, however, to these true deflections, we find a large number of cases which present a deformity of the nasal septum which cannot be called a deflection.

This deformity consists briefly of a prominent ridge running along the sutural lines, and which may be classed under three heads, in the order of their frequency, as follows: First, that in which the ridge is found along the line of junction between the vomer and the palatal process of the superior maxillary bone; second, that in which the ridge is found extending along the junction of the cartilage of the septum, and of the vomer, and ending abruptly at the junction of the upper border of the septal cartilage and the perpendicular plate of the ethmoid; third, that in which the ridge extends along the whole anterior edge of the vomer, including its union with the cartilaginous septum as well as the perpendicular plate of the ethmoid bone. This deformity is most frequently confined to one side, but may be developed on both sides of the same suture. It consists in a sharp-pointed spur or ridge, as it were, projecting on one side of the septum, with in no case a corresponding depression on the other. It is, therefore, not a deflection in any sense of the word. I know of no better way of explaining its existence than to regard it as a chronic arthritis, or, perhaps, a deforming arthritis as the result of an injury. The ordinary deflections of the septum we can easily understand as being the immediate result of traumatism; a blow on the nose producing a fracture of the cartilage, or of the vomer, and a permanent displacement, with or without acute symptoms. When we consider the prominence of the nose, and its liability to injury from any cause, we can easily understand how a deformity or a deflection of the septum would be one of the most frequent of occurrences, and I think it is far more frequent than is generally supposed. And, furthermore, without discussing the obscure and somewhat curious causes which have been assigned by various writers for the occurrence of these conditions, it is certainly a growing conviction in my mind that they are all, both deflections and deformities, due primarily to traumatic causes. Many instances, especially of deflection of the septum attended with gross deformity externally, are easily traceable to a specific injury, such as a fall or a blow. The large majority of the cases, however, I am convinced, are due to a mild traumatism, possibly of so slight a character as to be overlooked at the time, which has set up morbid changes which have developed marked symptoms at a later stage. This I regard as certainly the most rational method of explaining the deformities which I have described. Probably in a majority of the cases the injury has occurred during childhood, or even in infancy. Few babies when first learning to creep but have occasional tumbles, striking the nose. When we consider the character of its supports, it is difficult to see how these apparently trivial blows may not result in an arthritis, or even a deflection, which at the time gives rise to no symptoms whatever, but which in later years may develop very serious and very annoying symptoms. In a certain number of cases it would seem as if the two lamellæ which make up the vomer, as the result of a direct blow on the nose, were spread apart, sliding laterally, as it were, upon the junction with the superior maxillary, one lamella in one direction and the other in the opposite, forming thus a prominent spur in either side. Occasionally we see the lower edge of the vomer as a whole driven to one side, but far more frequently the two lamellæ separate in the manner described. That this sutural separation must result in a certain amount of arthritis is easily understood—this arthritis resulting in a thickening of the joint, and thus in a structural deformity. How this injury, occurring in infancy, may result in no untoward symptoms until ten, fifteen, or twenty years later I hope to make clear to you in the analysis of the cases presently to be given.

In the treatment of deformities of the nasal septum the object in view has been to restore normal nasal respiration. One of the earliest operations resorted to for this purpose was that of Blandin,[1] who made use of an instrument not unlike an ordinary shoe-punch, by which he removed small disks of the nasal septum at the projecting portion of the deflection, thus making an artificial per-

[1] Read before the New York Academy of Medicine, December 30, 1886.
[2] Bull. de la Soc. Chir., 1851–52. [3] Berlin. Klin. Woch., 1882, No. 4.
[4] Archives of Otology, March 1883.
[5] Trans. Am. Laryngological Assn., 1882, p. 69.
[6] Trans. Med. Soc. of Virginia, 1883. [7] Am. Jour. Med. Sci., July, 1885.

[1] Compend. de Chirurg. Prat., tom. iii.

foration of the septum. Now, in itself a perforation of the septum does not necessarily weaken the supports of the nose, nor give rise to any unpleasant symptoms, except that in a few cases which I have met—fortunately rare—the perforation gave rise to a whistle on inspiration. Unfortunately Blandin's operation, while relieving certain cases, was not capable of relieving the majority of them, while the extent of the deflection in many cases absolutely contra-indicated the removal of all of the offending tissue.

Probably a more rational operation was that of Adams,[1] which, in short, consisted in refracturing the septum by means of a broad, flat-bladed forceps, and afterward holding the fragments in position by the use of a screw clamp, which was worn in the nose, until the parts had become solidified. The difficulty about Adams' operation was twofold. In the first place, a broken septum has become so far thickened at the point of fracture that there is not room enough in the framework in which it stands to restore it to its original plane, and, furthermore, the point of fracture is the most difficult part of all the septum to break over, and even after extensive comminution prominences would still remain sufficient to impair the success of the operation. Moreover, the operation itself, as well as the subsequent treatment, were exceedingly painful.

I have performed Adams' operation in a number of cases, and while not a failure, in no instance was the result thoroughly satisfactory.

A still later operation was that suggested by Dr. A. J. Steele,[2] of St. Louis, who modified Blandin's punch in putting upon one of its blades a number of crossing knives in such a way that it would make stellate incisions through the septum, reducing the deflection part to a series of tongues or flaps, which could then be more easily brought into a vertical plane. Steele's operation was a great improvement on Adams' in that it substituted for irregular comminution definite and regular incisions. This operation again, however, is only adapted to a very limited number of cases, but is still valuable in those cases in which the deflection is confined entirely to the cartilaginous septum.

Dr. Ingalls,[3] of Chicago, has suggested a very ingenious little plastic operation on the septum, from which he reports most excellent results. His operation, in brief, consists in dissecting up the mucous membrane, cutting out a wedge-shaped piece of cartilage, and uniting the edges. Ingalls' operation first recognized the fact that there is redundancy of tissue in the deflected septum which will not admit of its being restored to the median line without first removing some of this redundancy.

Dr. Jarvis,[4] of New York, has also devised a method for operating on these cases, which consists in removing the offending tissue by means of the snare, transfixing-needle, and scissors, the details of which I need not describe. Dr. Jarvis secures most excellent results from his operation, as we can well understand from so skilful an operator. In my own hands, however, Jarvis' method has failed to secure that complete restoration of the nasal passages, necessary to a perfect result.

The rather novel and ingenious suggestion of Dr. John B. Roberts, of Philadelphia, of straightening and holding in position a deflected septum by the insertion of a pin, which is embedded within the cartilage in such a manner as to restore it to its normal plane, I have tried in a few cases. The operation is feasible only in cases of cartilaginous deflection, but in these is undoubtedly of much value.

These various operations have failed in my own hands to meet the requirements of the very large majority of my cases. Recognizing the fact that there was a redundancy of tissue in all cases, which must be gotten rid of, and that the object to be kept in view was to restore the nasal septum as nearly as possible to its original contour, I first tried paring away the projecting portion by means of a knife, as suggested by Chassaignac and Gross. I very soon, however, found that while my knife would easily go through cartilaginous tissue, it failed to make any impression upon bone, and, furthermore, that in the very large majority of cases the offending tissue was in part, or in whole, bony in character. I then resorted to several devices in the shape of cutting forceps and gouges, which I soon found were not only very painful, but exceedingly unsurgical; they failed to do the nicer work that was required. I finally concluded that the only instrument which could do the work was a saw. I procured one of Lent's subperiosteal saws, which, as you know, is a small, fine-bladed saw, mounted on a straight handle. This I found worked very well in a few cases where the projection presented at a prominent angle. In those cases, however, in which my saw was compelled to enter at a very sharp angle, the instrument failed to take hold. Furthermore, my hand obscured vision so far as to interfere with the operation. I then had a saw made with a thin blade, attached to a large handle at an angle of forty-five degrees. The saw was made with teeth set and crosscut, and on the ripsaw pattern, that is, with a forward trim to the teeth. This instrument did better work, but I still found difficulty in making it enter at a sharp angle. I then had the set removed from the teeth, still making the blade as thin as possible, and had the crosscut removed, the teeth being filed at right angles. I still met with difficulty in that the cutting had to be done with a single motion. I could not enter the saw, but could only cut with the motion of withdrawal. I finally gave the following directions to the instrument-maker: The blade to be as thin as possible, consistent with strength, an eight of an inch in width, five inches long, with a cutting edge of three inches, thirty teeth to the inch, each tooth an exact equilateral triangle, with no crosscut, and no set to the tooth; the handle being three inches long, attached at an angle of forty-five degrees. (See Figure.)

The Writer's Nasal Saw.

With this instrument I have now performed a series of operations, which I report to you to-night, with results so uniformly successful that I have felt myself justified in bringing it before you. The operation itself has been so successful that I feel convinced that it places in our hands a method of dealing with this troublesome condition which promises more uniformly good results than any other mode of procedure. But the results which I have obtained I think possess a far greater interest in that they throw a flood of light, it seems to me, not only on the pathology of intranasal disease, but also on the connection between diseases of the nose and the series of so-called nasal reflexes, such as asthma, deafness, cough, and other disorders. Before entering upon the report of my cases, I may say with regard to the operation itself that with the use of cocaine it is absolutely painless. I am disposed to think that we have been using cocaine in entirely too weak solutions. My own experience teaches me that a twenty per cent. solution is both more economical and more satisfactory in its action as an anæsthetic than the weaker solutions.

My mode of procedure has been as follows: First, with a Delano atomizer a twenty per cent. solution of cocaine is sprayed into the nostril, both on the obstructed and on the open side. At the end of two minutes a probe,

[1] British Med. Jour., October 2, 1875.
[2] Glasgow, Trans. Am. Laryngological Assn., 1881, p. 117.
[3] Trans. Am. Laryngological Assn., 1882, p. 61.
[4] Trans. Am. Laryngological Assn., 1882, p. 69.

wrapped with cotton, is dipped into the same solution and swept over the projecting portion of the septum, the membrane being by this time so nearly anæsthetized as to tolerate a thorough probing. The cotton pellet is used to bring the cocaine in more thorough contact with the septum, and also for more thorough exploration of the extent and character of the deviation. At the end of six minutes the parts are thoroughly anæsthetized. The saw is now introduced, and fixed in such a position that, in cutting, the whole of the projecting portion will be removed, the object being kept in view always to reduce the septum as far as possible to its normal outlines. In other words, it is to be sawed down as we saw a board out of a log. After the instrument has entered, the sawing is done with as rapid a motion as it is possible to give the hand, care being taken to make a straight cut without bending the instrument. In this way the saw is carried directly down through both bone and cartilage until it emerges at the lower edge. Occasionally I have used the reverse manipulation, and sawed from below upward, where the deflection was of such a character as to interfere with entering my instrument well above the point where the projection bent from the median line.

After cutting, the piece is generally easily removed by the forceps, or, if not thoroughly cut through, it can be removed by slipping the loop of the snare over it. The bleeding is profuse for two or three minutes, but in no case have I had any serious annoyance from hemorrhage. In two instances, I think, I have been compelled to plug, but in only two. Hemorrhage is arrested by clot, and I simply direct my patient not to expel the clot for three hours, when I think all danger of hemorrhage has ceased.

In regard to the operation, in only a single case of all the operations which I have performed have I cut through the septum, which illustrates the fact of its marked thickness at the point of fracture, and, furthermore, explains why Adams' operation for straightening is so often unsuccessful. I present here the pieces removed, which, as you see, although shrunken by alcohol, still show the character of the deformity as it existed, the relief that it must necessarily have given, and the cleanliness and surgical accuracy of the operations.

Objection has been made to these operations that they result in ulceration. Now I wish to say, in as positive a manner as possible, that in no case have I had any such result. The subsequent treatment is nothing. The healing process requires no attention. The parts heal up kindly, and, as a rule, with no unpleasant symptoms during the process. It has been charged that bad cicatrices result. Again, I say that I have seen no such result in any case. The mucous membrane reforms over the cut surface, and at the end of two months it would be difficult to recognize the fact that any cutting had been done. Too much importance cannot be laid on the necessity of a perfectly straight, smooth-cut surface. In one or two instances in operating I bent my saw, which is exceedingly flexible, in such a way as to make a hollow cut, sawing in a curve, as it were, leaving a depression on the surface of the septum. Whenever I have made such a mistake there has been exceedingly great annoyance from delayed healing, owing to the fact that mucus and bloody pus accumulated in the depression and formed crusts, and thus markedly interfered with the healing process. And herein, it seems to me, lies an objection to the rougher operation of the gouge and the forceps in removing these obstructions, as leaving an irregular surface for the lodgement of mucus and secretions. This, however, does not form ulceration. We meet with no ulcerations in the nasal cavity, except as the result of syphilis or some blood-poisoning. Delayed healing may occur, but not ulceration, after the operation; and delayed healing, I am positive, can only be the result of unskilful operating.

I will only add, with regard to the operation, that it should always be done, if possible, with the use of sunlight or some equally powerful illuminator.

The symptoms of a deformity of the septum, as will be seen later, are, I take it, the symptoms of the diseases to which it gives rise, viz., catarrhal inflammation, involving a greater or less extent of the upper air-passages. There is, however, one direct symptom which I regard as pathognomonic, and that is, an alternating stenosis of the nasal passages, by which the nasal obstruction sets in first on one side, then on the other.

This symptom is due to the marked weakness of the muscular coats of the blood-vessels, which is one of the earliest results of a nasal stenosis from a deformity of the septum, the diminished atmospheric pressure beyond the point of obstruction causing a chronic congestion, as will be seen farther on.

Recurring attacks of epistaxis, often excessive in character, are a frequent symptom, due to a slight erosion developing at the apex of the projection. These are far more frequent in slight deformities than in extensive ones, as the erosion, I deem it, is due to the ingoing current of inspired air, dust-laden as it often is, acting in a small way on the principle of the sand-blast. I might add that I have rarely seen a case of recurrent epistaxis in which the source of the hemorrhage could not be traced to an erosion at the apex of a deflected septum or in the concavity of the opposite side, where the erosion is due to the lodgement of incrustations.

The diagnosis should be a very simple matter in our day, when the cavity can be so thoroughly inspected after the reduction of venous congestion by the application of cocaine.

Any irregularity or projection in the vertical plane of the septum, of sufficient prominence to interfere even slightly with the free passage of air, must, I think, be regarded as an abnormality requiring correction.

A very distinguished authority on diseases of the throat has recently stated that "the appearance of the interior of the nose varies immensely in healthy persons." If by this is meant that the normal nasal cavity varies in appearance, I certainly take issue with the statement. A normal nasal cavity presents, in brief, a septum in the median line and in a vertical plane, each side of which presents a flat, smooth surface. This is flanked on either side by the turbinated bones, covered by a mucous membrane, in which a morbid condition should be recognized by the same tests by which we recognize morbid conditions of a mucous membrane in any other part of the body. Any departure from these conditions constitutes a morbid condition.

I have frequently heard the remark made by specialists that they have never seen a healthy nasal cavity. This seems to me a most lamentable confession. Healthy nasal passages are very common, and I have frequently had patients referred to me for examination whom I have sent away with the assurance that there was nothing for me to do. These were, of course, patients sent with reference to some supposed reflex disturbance.

During the past two years I have performed this operation on one hundred and sixty-six patients of whom I have kept records. This does not include a large number of cases operated upon casually, of which I have kept no records, and cases at my clinic at Bellevue, of which the records were imperfect. It includes only those cases which have been operated upon in my private practice, wherein the records were sufficiently accurate to warrant my making absolute statements in regard to them. These cases include all of those which have been recorded, without selection.

Its Relation to Hypertrophic Rhinitis.—Forty-five cases operated upon were for ordinary so-called naso-pharyngeal catarrh. I have never yet learned what was meant definitely by the term naso-pharyngeal catarrh. As far as I know, it had never been accurately located until the second volume of Mackenzie's work appeared, wherein it is described as catarrhal inflamma-

tion of the naso-pharynx, or vault of the pharynx. I seek in vain, however, in Mackenzie's chapter for light on the pathology of the disease—a foot-note under this heading refers to the article in his first volume on "Hypertrophic Granular Pharyngitis." On referring to this, however, I find nothing on the subject. This can only be explained by the fact that there are no pathological changes here to be described; the source of the trouble is in the nasal chamber.

Beverley Robinson is more frank, for while he has given us, in the second edition of his work on "Nasal Catarrh," undoubtedly the best *résumé* of the subject which has yet appeared, he plainly acknowledges his inability to offer any suggestion as to the pathology of this affection.

I think the general impression is, however, that it is a catarrhal inflammation involving the nasal cavity and the pharynx. My 45 cases, however, gave rise to a definite train of symptoms, much as follows: There was interference with normal nasal respiration, accumulation of mucus in the fauces, hawking and spitting, aggravated on waking in the morning, and special liability to colds in the head; in fact, the ordinary train of symptoms which we meet with in so-called nasal catarrh. The operation in these 45 cases resulted in cure in 32 cases and in relief in 13. In every case the operation was fully warranted, and in the least successful case I think I may say that the relief was very great. In a number of these cases there was, in addition to the operation, a considerable amount of treatment required, consisting mainly of cauterization of hypertrophied tissue on the turbinated bones; but in a majority there was a progressive improvement following the operation, by which, at the end of two or three months, the success of the operation was more noticeable than immediately after.

Now, it seems to me there is considerable to be learned from these cases. I believe that in everyone of them the primary source of the whole difficulty lay in the deflected septum producing nasal stenosis and subsequent hypertrophic changes in the nasal mucous membrane, these constituting all the pathological changes which the nasal mucous membrane had undergone.

Its method of development is simply as follows: During infancy or childhood an injury to the nose had resulted in deflection or deformity of the septum, interfering with normal nasal respiration. With each act of inspiration that portion of the nasal mucous membrane which lay immediately behind the point of obstruction became subjected to diminished atmospheric pressure. This diminished pressure, acting on the soft, spongy, vascular tissues covering the turbinated bones, resulted in a tendency to abnormal turgescence. This action, very slight in the first few years after the injury, gradually developed a permanent hyperæmia of the blood-vessels. Now, it is a noticeable fact that if the obstruction be comparatively slight, this turgescence is developed in the narrow passage. If, on the other hand, the deflection is extreme, all the inspired air is compelled to pass through the opposite side, and this is the case in most instances, so that we have this chronic hyperæmia developing in the healthy side. Diminution of atmospheric pressure thus acts on both cavities. The result of hyperæmia, of course, is increased nutrition, and we have finally set up certain structural changes in the membrane proper. The blood-vessels, the large venous sinuses of the membrane become dilated, and the intravenous tissue becomes thickened, and we have as a result true hypertrophy taking place, a permanent structural thickening of the membrane. Now, as we have seen, the first symptom that occurs is nasal stenosis, with resultant mouth-breathing. Mouth-breathing is often said to be a habit. Mouth-breathing is never a habit; it is a necessity, due to the fact that the individual cannot get air enough through the nose. Now, this nasal stenosis may exist at the onset of the injury; but, as I have said before, the real catarrhal symptoms often do not set in until ten, fifteen, or twenty years later. The inference, it seems to me, is that this so-called vicious habit of mouth-breathing is by no means the vicious habit that has been claimed. It is not mouth-breathing which does the mischief. It is simply an adventitious feature of the disease. Mouth-breathing is not necessarily a mischievous habit. It is a necessity, and an evidence of a morbid condition elsewhere, and it is this morbid condition which causes mouth-breathing and all the unpleasant symptoms which are attributed to it.

The prominent symptom of a so-called "nasal catarrh" is the tendency to mucous accumulation in the fauces, with what is usually termed pharyngitis. Now, it is a popular impression that the excessive secretion of so-called faucial catarrh is due to the pharyngitis. But I have examined the pharynges of a vast number of patients, and I am convinced that pharyngitis is one of the rarest of throat diseases. The pharynx belongs to the food-tract, and not to the air-tract. The pharynx is inflamed oftentimes in connection with chronic gastritis, but never, I think, or very rarely, in connection with inflammation of the air-passages. The excessive secretion of so-called pharyngeal catarrh is not from the pharynx; it is from the nasal chambers; from the hypertrophied mucous membrane largely. It is a very popular impression that this so-called nasal catarrh gives rise to an excess of secretion; that a mucous membrane, the seat of chronic inflammation, pours out an increased amount of mucus. I think this is exceedingly doubtful. I believe the real truth of the matter is that, instead of increased secretion, there is probably diminished secretion. Certainly there is no marked increase of the secretion, as is the popular view. The secretion is perverted to that extent that it becomes thick and inspissated to a degree that it is not removed by the ordinary efforts at expectoration. The normal secretion of the nose is a very thin fluid mucus, of about the consistency of a thin syrup, so rendered by the exosmosis of serum from the turbinated tissues, which probably in the twenty-four hours amounts from fourteen to sixteen ounces. The nasal mucous membrane pouring out this large amount of serum, the mucus becomes diluted to that degree that it can flow freely into the fauces and, even, in large amount, without the patient being conscious of it. Now if the turbinated mucous membrane is thickened and hypertophied, as the result of a long-standing hyperæmia, the natural consequence is that the exosmosis of serum is interfered with, the normal nasal secretion becomes thick, and is removed with exceeding difficulty. Moreover, in the place of the normal transparent mucus we have a muco-purulent discharge, as it were; a discharge which contains a large number of epithelial cells, the excessive proliferation of epithelium being a part of the chronic hypertrophic process. In the forty-five cases already alluded to the success of treatment was primarily due to removal of the primary cause of the disease—as I take it, the obstructing deflection of the septum. After removal of that we were ready for the successful treatment of the hypertrophied membrane which had resulted from the deformed septum. The destruction of the hypertrophied tissue and the removal of the septum completed a perfect cure in these cases.

I think it but just to myself to say that in the thirteen cases which I report as only relieved, and not cured, some of them were so far benefited as to cease treatment. In others the deformity of the septum presented conditions which were beyond my manipulative skill to remedy, for I might say here that whereas a very large majority of the cases of deformities of the nasal septum are amenable to the operation which I have reported, we occasionally certainly must meet with cases which are beyond the reach of our skill, the deformity being so located high up in the nasal chamber, or so far back, as to interfere with the success of the operation. The teaching, however, remains, and it seems to me is unmistakable. The removal of an obstructing piece of the cartilage, which in itself performs no important physiological function, cures a long-standing catarrhal disorder. Its action is to re-

store normal atmospheric pressure to the membrane, thereby diminishing turgescence and restoring normal blood-supply, and, consequently, normal nutrition, to the part.

I have stated that the faucial secretion in nasal catarrh was due to secretion from the nose passing into the pharynx; this is only partly true. Much of the secretion in the fauces has its source in the glandular tissue in the pharyngeal vault. This mass of glands pours out a very large amount of clear, transparent mucus, whose function is to lubricate the bolus of food, and to facilitate its passage into the stomach. In health this secretion passes down behind the palate in large quantities, and without one being conscious of it, as all of us have noticed many times in examining the lower pharynx. Now, in hypertrophic rhinitis, as I have already asserted, the membrane is so much thickened that exosmosis is seriously interfered with. Hence the inspired air reaching the upper pharynx has a tendency to dry and render inspissate the mucous secretion there found; it lodges, therefore, a thick tenacious plug, which is voided with much difficulty. We have here again markedly diminished secretion, giving rise to a so-called naso-pharyngeal catarrh, and not an excessive secretion. That this is the true view, I think, is the unmistakable teaching of these operations. It has been the fashion in past years to treat naso-pharyngeal catarrh by local application to the pharyngeal vault, and we have a number of instruments, named after their devisers, to facilitate this manipulation. I doubt if a single case of the disease has ever been cured by this method. If it can be cured by operation on a deformed septum, without further measures, there can be but one conclusion—my reasoning is correct.

Its Relation to Chronic Rhinitis.—Twenty-one operations were done for simple chronic rhinitis, in which there was marked turgescence of the mucous membrane without structural hypertrophy. In these cases the prominent symptoms were especial liability to cold, nasal stenosis, snuffling, and watery discharges from the nose. It was a notable fact in these cases that a majority of them were under twenty years of age. The hyperæmia had existed for longer or shorter periods, but in no case sufficiently long to give rise to hypertrophy.

The prominent condition in these cases consisted simply in obstruction of one nasal passage, due to the deflection of the septum, with hyperæmia on one or both sides; the existence of hyperæmia, in contradistinction from true hypertrophy, being in every case easily recognized, as you know, by the local use of cocaine, which, expelling the blood completely from the membrane, enables us to detect a swelling due in one case to the mere hyperæmia, in another case to hyperæmia with hypertrophy. In most of these cases the immediate result of the operation was relief without further treatment, opening up the nasal passage, admitting of normal atmospheric pressure to the whole mucous membrane, under the action of which the hyperæmia and swelling subsided. In a few cases, where the normal tension of the coats of the blood-vessels had been so far weakened by the long-continued hyperæmia, a moderate amount of treatment was required. This consisted in the application of chromic acid, a caustic which I prefer above all others. The action of chromic acid is valuable to us, not only in destroying hypertrophied tissue, but also in reducing hyperæmia; for, as you know, after the turgescence has been reduced by the application of cocaine, a few crystals of chromic acid laid upon the parts destroy the superficial layer of the membrane, converting it into a more or less dense slough which adheres closely to the surface for three or four days and holds it down, as it were, and prevents a return of the turgescence, its action being not unlike that of a film of collodion.

Let me add in this connection, that an especial liability to colds in the head is one of the prominent symptoms of the class of cases mentioned in the above head, viz., deformed septum, with chronic hyperæmia of the turbinated tissues. It is an old teaching that chronic inflammation results from a series of colds; that chronic nasal catarrh is caused by frequent colds in the head, or by neglected colds. I have taught the same doctrine within very few years. Now, there is no such disease as nasal catarrh. No one has ever yet described the definite pathological changes which characterize it, or even its locality. It is merely a symptom and not a disease. Translate it into English, and call it a nasal discharge, and we get at its proper meaning.

The liability to colds in the head is to be regarded as one of the prominent symptoms of the early stage of a chronic rhinitis, the chronic inflammation commences first. This, it seems to me, is shown conclusively in studying the development of these catarrhal troubles in the upper air-passages. The same is true of the larynx, trachea, and bronchial tubes. A mild chronic inflammation is the first morbid change, and recurrent attacks of acute inflammation become a prominent symptom.

Its Relation to Diseases of the Larynx and Bronchi.—We come now to the consideration of those morbid conditions of the larynx, trachea, and bronchial tubes which are found dependent upon the nasal disorder, and which have been more or less successfully affected by the operation. Of bronchitis and laryngitis, or simple laryngitis, with an impairment of the singing or speaking voice, there were 5 cases, 3 of which were entirely cured, 2 markedly relieved. These were cases of clergymen and professional singers. Of bronchitis there were 18 cases, 8 of which were cured and 10 relieved; of simple irritative cough, due to mild hyperæmia of the larynx, with no evidence of bronchial trouble and no expectoration, 5 cases were operated upon with perfect success; of hay-fever there were 13 cases and 5 cures; hay-fever and asthma, 11 cases and 5 cures; of asthma alone, 12 cases and 6 cures; of rose-cold, 2 cases, both cured; of rose-cold and asthma, 2 cases, both cured.

There is much in this last series of operations which is exceedingly instructive with reference to the connection between diseased conditions of the nose and diseased conditions of the bronchial tubes. In order, however, to make clear my idea, and to make my paper complete, it will be necessary to briefly allude to certain views in regard to hay-fever and asthma, already expressed in a paper on this subject read before the American Climatological Association, May 28, 1885. We are too apt to regard the nose as the organ of olfaction, whereas it seems to me this function is somewhat adventitious. The olfactory nerve probably could find no more convenient place for its distribution than in the nasal chamber, because here odoriferous particles will most readily reach its terminal filaments. But this function is quite secondary in importance to the great respiratory function of the nasal chamber. Impairment of olfaction is not a grave matter. Impairment of the respiratory function of the nose may lead to most serious results. We are told that the function of the nose is to warm and moisten and purify the inspired current of air. This respiratory function essentially consists in the profuse exosmosis of watery serum, already alluded to, by which the ingoing current becomes more or less completely saturated with water, the warming and rarifying of the air being of far less importance than this. If by any cause the mucous membrane of the nose becomes the seat of morbid changes, this function is interfered with, and one of its direct results is, I believe, the development of a catarrhal inflammation of the larynx, trachea, and frequently of the bronchial tubes, due to the fact that the air entering the passages below has not been so thoroughly fitted to enter these delicate parts that it may not do injury. The long-continued action of this process is to develop morbid changes here. We often regard a laryngitis and bronchitis as the extension of a catarrhal process from

the nasal membrane. That such is the case I do not believe. There is no continuity of tissue. As before stated, the pharynx is not a part of the air-passage, its membrane is not inflamed in connection with disease of the air-passages. Extension of the catarrhal process must necessarily involve a continuity of tissue in close physiological relation, and this does not exist. That this is the true view I think is well shown by the fact of our utter failure for many years to treat successfully catarrhal disease in the larynx and trachea by local application, and by our final and striking success in curing such diseases by removing diseased conditions in the nose, to the exclusion of any local measures whatever, directed to the passages below. That there is a close physiological connection between the nose and the bronchial tubes is shown by numerous experiments. Hyperæmia of the nose is very apt to be followed by hyperæmia of the tissues below. An irritable condition of the nose is followed by a similar condition of the bronchial tubes. The probe passed into the nose will often cause quick, expulsive cough. In my paper, already alluded to, I took the ground that hyperæmia of the nasal mucous membrane, with weakness of vaso-motor control, was the result of diminished atmospheric pressure, caused by nasal stenosis, this being the primary factor in the development of hay-fever and asthma. It seems to me that there is an additional element to be counted upon here, and that is the close, quick, and intimate sympathy between the membranes in the two regions. What this is I do not attempt to explain.

We speak of it as reflex. Are we not in danger of extending the use of this term too far? I am disposed to think that we often use it to cover our ignorance of the real connection between obscure symptoms and the real seat of disease. Whatever the relation may be, I think the inference may be clearly drawn that a morbid condition in one region is especially liable to be followed by a similar condition in the other. Vaso-motor paresis of the blood-vessels of the nose, constituting inflammation, is liable to be followed by vaso-motor paresis in the larynx, trachea, and bronchi. Complete vaso-motor paralysis in the nose, constituting hay-fever, rose cold, etc., is especially liable to be followed by complete vaso-motor paralysis of the blood-vessels of the bronchi, constituting asthma. An application of cocaine to the nose I have seen relieve an attack of asthma in less than three minutes, and this in many instances. Can we explain this in any other way than as above? A single application of chromic acid to the turbinated tissues of the nose I have seen in very many instances relieve a cough instantly. This I have done with especial success in children, even as young as two years of age.

The action of the acid was here to reduce hyperæmia in the nose, which was immediately followed by the disappearance of the tracheal and bronchial congestion. We attribute the successful use of caustics in the nose to the destruction of tissues. This I regard as a mistake. The more important action is, I think, in controlling hyperæmia. In the same manner the removal of a septal deformity is followed by relief to the overcharged blood-vessels in the bronchi.

To make my point clear, I relate the following case: Mr. G——, aged twenty-seven, consulted me early in October, with the history of asthma commencing in 1873, mild in character for three years, but for the last ten years of so great severity as to compel him to seek relief in most of the health-resorts in this country and in Europe, but without success. His attacks usually came on at night, were worse in winter than in summer, and lasted weeks, and even months. His seasons of immunity, were most frequent in warm weather, rarely lasting over a few weeks at a time; occasionally, however, three months. His family history was clear of any neurotic tendencies, and an examination failed to reveal anything other than a prominent deflection of the nasal septum to the right, and very marked hyperæmia of the turbinated tissues of the left side. I advised an operation, which was consented to, and from the day of the operation to the present he has been entirely free from asthma. His health, which before was exceedingly delicate, has markedly improved. He has gained in flesh, and his chest measurement has increased about three inches, as he tells me.

This, as an illustrative case, it seems to me, is rather striking. The operation secured two results. It opened the left nasal passage by the removal of obstructing bony and cartilaginous tissue, allowed the air to enter freely, and subjected the mucous membrane of the turbinated bones to normal atmospheric pressure, under which their turgescence immediately subsided without further treatment. I have seen this patient several times since the operation, and made applications of chromic acid to secure greater patency of the air-passages as a protective measure. But the obstruction caused by the swollen turbinated tissues on the side opposite to the deflection was due to hyperæmia rather than to hypertrophy. A further result secured by the operation, then, in addition to removing the cartilaginous obstruction, was the relief of hyperæmia of the nasal membrane, followed immediately by subsidence of the hyperæmia of the bronchial mucous membrane. Asthma, as I have stated before, I believe to be the same disease as hay-fever. In hay-fever we have a complete paralysis of vaso-motor control of the blood-vessels which supply the mucous membrane of the nose, this complete paralysis resulting in their dilatation to the utmost extent, and at the same time resulting in the paralysis of the osmotic control, the watery discharge in hay-fever being the same discharge which occurs daily in health as constituting the respiratory function of this membrane. In health, under proper control, from twelve to fourteen ounces of watery serum are poured out daily. With the complete paralysis which occurs in hay-fever the amount may be five or six times this quantity.

Now in asthma the same thing occurs practically. An attack of bronchial asthma consists, I think, in the complete paralysis of vaso-motor control of the blood vessels which supply the bronchial mucous membrane. But here we have to do with a totally different anatomical condition. The immensely rich plexus of blood-vessels in the nose, when swollen to their utmost limit, completely block up this large passage, and pour out serum in large quantities. The minute blood-vessels of the bronchial tubes, when distended to their utmost limit under this complete vaso-motor paralysis, markedly diminish the calibre of the bronchi, and so interfere with respiration. The bronchial tubes do not possess the especial physiological function of serous exosmosis; therefore they do not pour out this large quantity of serum. The prominent symptom is merely that of obstructing the entrance of air to the air-cells. In the latter stage of asthma the attack passes off with cough and expectoration. The blood-vessels relieve themselves at this stage of the attack by a moderate amount of exosmosis, the turgescence subsides, and the sufferings of the patient are at an end for a time. Furthermore, in this connection, I might say that I think we have good reason for abandoning the old classification of bronchial, cardiac, and gastric asthma. In bronchial asthma, so called, or chronic bronchitis, the neurotic element is not prominent. The chronic inflammation of the bronchial tubes is the prominent factor; the asthma is an intercurrent symptom. The so-called gastric and cardiac varieties of asthma, I think, we must consider, in the majority of cases, if not in all cases, as nasal reflexes due to a diseased condition of the nasal cavity of an obstructive character. While the exacerbations may be precipitated by a temporary attack of gastric disorder or cardiac disturbance, which we can easily understand might be produced where the vaso-motor weakness already existed in the bronchial mucous membrane, I have seen no case of asthma—and my clinical records

cover a very large number in addition to those here reported—in which the source of the trouble could not be traced to disease of the nasal cavities. It is a very striking fact, however, that in a number of these cases, in which my diagnosis proved to be correct by the result of the treatment of the nose, one of the most prominent symptoms complained of was an exacerbation of the attack as a result of indigestion, with flatulence, and I have often found difficulty in convincing my patient that the primary seat of the disease was not in the stomach.

Another symptom which might be alluded to is the exceeding great frequency with which an attack of asthma commences with a sense of irritation of the nose and sneezing.

The special points, then, which I desire to emphasize are:

First.—That a nasal stenosis due to obstructive lesion must necessarily be followed, sooner or later, by hyperæmia of the membrane beyond the point of obstruction; this occurring first in the nose, and secondly in the larynx, trachea, and bronchial tubes.

Second.—A hyperæmia in the nose is liable to be followed by hyperæmia of the air-passages beyond, as the result of an intimate physiological connection between the two, both deriving their vaso-motor control probably from the same central ganglia; this hyperæmia, either in one location or in the other, tending toward the development, first, of catarrhal inflammation with hypertrophy, as shown in the cases of laryngitis and bronchitis dependent upon nasal disease, and only relieved by treatment of the nose, and, second, in those cases in which complete vaso-motor paralysis develops in the nose, giving rise to hay-fever, which sooner or later is followed by vaso-motor paralysis in the bronchial mucous membrane, causing true asthma.

Its Relation to Ear Diseases.—Twenty-four of my cases suffered more or less well-marked impairment of hearing, the hearing distance varying from one-fortieth to one-half normal. In addition to deafness there were hyperæmia and hypertrophic rhinitis in varying stages of development. As an immediate result of the operation in all cases there was improvement in the hearing distance; and as the result of further treatment, specially indicated in certain cases, 10 cases were ultimately cured, while 14 cases were relieved. Of these 24 cases, 8 suffered from noises in the ear, 4 of which were cured, and in 4 the operation failed to afford relief.

As regards the relationship between nasal disorders and ear troubles, I, of course, cannot speak as an expert. Many striking clinical facts, however, have come within my observation, which, it seems to me, throw much light on this question. Not only in deformities of the septum, but in a large number of cases of nasal difficulty, trouble with the hearing has been present; and the frequency with which it has been relieved by nasal treatment induces me to think that so-called catarrhal deafness is not due to an extension of the catarrhal process to the Eustachian tube. In examining the orifice of the Eustachian tube evidence of catarrhal inflammation is rarely seen. The inspection simply reveals this orifice lined with a membrane perfectly normal in appearance. With my imperfect knowledge of ear pathology I think the suggestion may safely be hazarded that in a very large proportion of cases the deafness is due, not to a catarrhal extension, but to rarefaction of air in the middle ear as the result of the nasal stenosis, and the closure of the Eustachian tube from hyperæmia rather than from inflammatory action, with the resultant depression of the tympanum and its loss of elasticity.

The further development into chronic catarrh of the middle ear follows in the same manner as in the air-passages. That it arises from an extension of the catarrhal process from the vault of the pharynx I do not believe. Disease in this region is exceedingly rare, except in children; but among them the large glandular tumors, so often seen in this region, are unquestionably a most prolific source of ear disease.

As regards tinnitus I have no suggestion to make. I simply offer the clinical fact that out of 8 cases 4 have been cured by the operation. Perhaps when the otologists shall have harmonized their views regarding the pathology of this distressing affection, the mechanical action of nasal stenosis in producing it may become more clearly understood.

In addition to the above class of cases I have operated on 2 cases of chorea, both of which were cured, with a moderate amount of subsequent treatment of hypertrophic tissue; 1 case of spasm of the glottis, cured; 3 cases of vertigo, cured; 1 case of epilepsy, operated upon December 1st, since which time there has been no attack as far as I have heard.

Upon the special relation existing between nasal disorders and these nervous affections I have no disposition to speculate. Spasm of the glottis, I believe, in far more cases than we recognize, is dependent upon laryngeal hyperæmia secondary to nasal disorder. The patients with purely nervous affections were benefited in their general health by the operation. The free entrance of air to the lungs through healthy air-passages I believe to be one of the best of tonics, as I have verified in numberless cases in which I have seen vigor re-established by treatment of the nasal passages. That this is the special indication in all of these cases of nervous disorders I am not disposed to say. That the treatment resulted in so much benefit in the above cases has been a source of satisfaction.

In closing this paper I have only to say that I have endeavored to give the result of the operation with as much accuracy as my records afford. When I say that an ordinary faucial catarrh has been cured, I mean that all the symptoms which rendered it a source of annoyance to the patient have been removed. What a complete cure is in catarrh is a nice question. It consists simply in the very accurate adjustment of the relations between mucous secretion and the respiratory exosmosis from the turbinated vessels. In the cases which I have reported as cured, I think the use of the term has been justifiable. In all cases, without exception, I think I may say that the operation has resulted in relief, and in most of the cases in marked relief to my patients. Many of the failures have been due to the fact that the deformity presented features which rendered it impossible to restore the septum to its normal plane.

In presenting these cases I desire to do so in all modesty, and would simply say that if I seem to write with undue enthusiasm it must be excused on the ground of many years of futile endeavor to devise some means of curing these heretofore intractable cases. If a device presents itself by which we do cure them, and cure them in flattering proportions, I think, perhaps, some little enthusiasm may be excusable.

It should be added that this action of diminished air-pressure, as the result of nasal stenosis, has been already alluded to by Dr. A. H. Smith, of this city, in The Medical Record for August 6, 1881. Dr. Smith takes the ground that its action is to produce hyperæmia, and, therefore, hypersecretion. As will have been noticed, I am disposed to think that diminished secretion is one of the essential conditions of so-called nasal catarrh, rather than hypersecretion. I will also add that since making use of this little saw I have been shown, by my friend Dr. Butlin, of this city, who has made a special study of the diseases of the eye and ear, an arrangement of the ordinary jeweller's saw which he has been using, since 1883, for the removal of these obstructions, with great success. I can only compliment Dr. Butlin in giving him this priority, and for the readiness with which he recognized the indications for treatment and the successful manner in which he carried it out. Dr. Butlin's operations were done for the relief of ear disease.

As regards my own instrument, I claim no especial pri-

ority—a nasal saw is not especially new, others have used it. I do claim, however, to have made an instrument which may be depended upon to do the work required, and, furthermore, to have demonstrated its value.

Before I close I desire to add a few words in regard to the causes of catarrhal diseases. We hear much of our American climate as a cause of catarrh, some charging that our frequent changes are the source of the mischief, while others attribute it to the dust-laden atmosphere. Climate has much to do in aggravating an existing morbid condition in the upper air-passages, but very little to do in causing it primarily. My own conviction is, that certainly a very large majority of cases are due to the injuries above described. Atmospheric conditions and climatic changes are not harmful to healthy mucous membranes; we must, therefore, look elsewhere for the true source of these affections. That it is in these deformities, in a large proportion of cases, my observations convince me more strongly day by day. As I have shown, the injury which causes them occurs usually in childhood when the parts are soft and especially liable to injury. This, then, it seems to me, is the time when the disease is to be prevented. We attach too little importance to a fall or blow on the nose in young children; we should, I think, recognize in it, a possible if not probable source of grave trouble in later years.

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THE DANGERS OF THE ADMINISTRATION OF ETHER IN NEPHRITIS AND IN BRIGHT'S DISEASE.

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The dangers thus arising are at present fortunately very well known, and I do not think that any experienced practitioner would now be likely to permit the use of ether in a case in which the existence of nephritis was recognized. There exists, nevertheless, a large number of cases of light or mild albuminuria, perhaps intermittent, and without renal symptoms or marked impairment of the health, in which the nephritis has not attained the fully developed dignity, as it were, of Bright's disease, and where the needed caution in the use of ether is liable to be, and often is, disregarded. The following case, which came most near to a fatal termination, will illustrate this:

In May, 1885, my patient, Mrs. X——, aged thirty-five, the kidneys being perfectly normal, underwent the operation of curetting the uterus, by Dr. W. Gill Wylie, some hemorrhoidal trouble receiving attention at the same time. Ether was freely administered, the patient being under its influence nearly thirty minutes. She bore it perfectly well, and no untoward results followed. In March, 1886, the patient having been exposed to severe cold, the kidneys became affected, there being evidences of slight catarrhal nephritis. Repeated examinations, however, showed no casts, and but very few renal epithelia, and though the specific gravity was low the amount of albumin was at all times slight.

I first detected albumin, March 5th, there being one-tenth of one per cent.; April 16th, specific gravity 1.003, with one two-hundredth of one per cent. of albumin; April 21st, specific gravity 1.006, one-fortieth of one per cent. of albumin; May 14th, specific gravity 1.003, one-seventy-fifth of one per cent. of albumin. Too little importance, as events showed, was attached to the low specific gravity, owing to the fact that the patient was of a very nervous temperament, and usually passed large quantities of urine. For several months preceding the operation there had been menorrhagia (it may be mentioned that the patient had uterine fibroids), and Dr. Wylie thought best to curette the uterus, which he accordingly did at 4 P.M., May 26, 1886. Ether was administered; the patient was not under its influence more than fifteen minutes; she bore it quite well, and, although she had considerable vomiting in the night, slept fairly, though she took little or no food.

The next day at 1 P.M. I was summoned in haste, and found her in a state of collapse; she was barely conscious, and could speak with difficulty, the action of the heart was very feeble and intermitting, there was great dyspnœa, and the breath had a strong odor of ether. Dr. Wylie soon after arrived, and we could not account for the collapse except in the supposition that the kidneys were at fault. Fortunately the urine passed since the operation, about eight ounces, had been kept, and we found this to be highly albuminous. A hypodermic injection of half a grain of morphine was administered, also ten drops of digitalis, and after that five drops in alternation from time to time with small doses of corrosive sublimate; whiskey was also given in small doses. The next morning she was out of immediate danger; the odor of ether was, however, apparent for two or three days. The evening of the collapse I was able to make a microscopic examination of the urine. I found acute hemorrhagic nephritis; there were hyalin, granular, and blood casts in abundance. On the 28th nine ounces of water were passed; after that the quantity increased and became abundant, amounting, indeed, in time to polyuria. The renal condition was so grave that it was followed by albuminous retinitis and dangerous cerebral congestion—June 27th, a month after the operation, uræmic convulsions being imminent. Acute catarrhal had been superadded to the original mild, chronic catarrhal nephritis. July 9th Dr. Hermann Knapp made an examination of the eyes and pronounced them to be in the convalescent stage of albuminous retinitis. At no time was there any œdema or, excepting immediately after the operation, nausea.

The patient has since quite recovered from the nephritis, by prolonged rest (nearly three months in bed), sweating, milk diet, and the use of appropriate remedies. For the three months preceding January 15, 1887, there have been neither casts, renal epithelia, nor even traces of albumin, while the average daily excretion of solids has been about seventy-five grammes. During the month of June it did not exceed twelve grammes, though she was taking then, however, next to no nourishment.

As regards the responsibility of the administration of ether in this case, there was, perhaps, too much of a division of labor between Dr. Wylie and myself, and a complication of peculiar conditions and various severe symptoms caused the real condition of the kidneys to be overlooked or undervalued. A year before, severe and dangerous vomiting was produced, by gastric catarrh in part and in part by uterine fibroids, so that the patient brought near to the verge of starvation, and nutrient enemata had to be resorted to. The urine was then carefully watched, and nothing abnormal being found, ether was freely given, and the curetting did much toward the relief of the vomiting. In the spring of 1886, as I have stated, I found only traces of albumin, and neither casts nor renal epithelia. The specific gravity was indeed very low, but, as I have said, I did not attach great importance to this, as polyuria was common with the patient, and as much of her deranged health had been attributed to hysteria by physicians, among others Debove and Charcot, who saw her with me in the autumn of 1885, these eminent practitioners being, however, wrong in this case.

Dr. Wylie had the urine of May 15th examined, and two hyalin casts with a trace of albumin were reported. In numerous examinations I had found mucous, but no inflammatory, casts, and believed these casts to be simply mucous. I placed the whole matter of the operation, administration of ether, and all, in Dr. Wylie's hands, as I had done the previous year, and I supposed he took it for granted that had I seen any objection to the use of ether I would have informed him. The urine should have

been examined by me the day of, or the one preceding, the operation. At the same time, had I found the urine no worse than May 14th, I would not then have objected to the careful administration of the small amount of ether that was required for the operation. Nevertheless, I shall never again sanction its use when there is any diffuse nephritis, before at least ascertaining that the kidneys are excreting something like the proper amount of solids; if they cannot perform fairly well the work of elimination of solids, it is safe to take it for granted that they are incapable of excreting ether from the system.

Thorny, however, as was the road that led to the eventual cure of the chronic interstitial nephritis, I am certain that nothing less than an acute illness with absolute physical helplessness on the part of the patient, who would not otherwise have submitted to treatment with any degree of thoroughness, and who was extremely imprudent in all such important matters as diet, dress, exposure to weather, over-exertion, etc., would have enabled me to bring about a healthful condition of the kidneys; and had not the progress of the chronic nephritis been arrested in the violent manner that it was, I am confident that by this time a bad condition of cirrhosis would have been established. The knowledge of whether a condition of acute or subacute nephritis preceded the use of the ether, or was produced by it, would, of course, be valuable. The patient's digestion had been greatly impaired, and there was violent vomiting, as there had been a year before, when no albuminuria existed; nevertheless it appears to me now that some of the nausea may this time have been produced by trouble of the kidneys

It is reasonable to conclude that the administration of ether must always affect the kidneys, functionally or otherwise. From the manner in which the brain, and spinal cord, and sympathetic nerve are affected by ether, it can be easily seen that the renal nerves, which are derived from the sympathetic through the solar plexus, the semilunar ganglion, and the lesser splanchnic nerve, may be so affected as to derange at once the normal circulatory conditions of the kidney, or suspend the vital action of formation on the part of the renal epithelia, or the functions of the glomerulus, producing anoxæmia or a deoxygenated state of the blood of the latter. The conclusions of Charcot (Leçons sur les Conditions pathogéniques de l'Albuminurie), deduced from the experiments of Nussbaum, Overbeck, Heidenhain, Goll, Stockvis, and others, are that the glomerulus is the seat of albuminous secretion or exudation, and that this secretion results from diminished slowness and pressure, or entire suspension of the blood-current in the glomerulus, anoxæmia resulting; increased pressure producing not albuminuria, but polyuria. The intimate and rich supply of every part of the parenchymatous and circulatory system of the kidneys is ably shown in a paper, by Dr. Holbrook, on "The Termination of the Nerves of the Kidney," read before the American Society of Microscopists, in 1883, an abstract of which I have given in the second edition of my work on Bright's disease. According to this, the nerves supplying the kidneys are mainly of the non-medullated variety, sometimes surrounding the arteries in bewildering number, encircling them around, above, and below, freely branching, bifurcating, and supplying all the neighboring formations with a large number of delicate fibrillæ, a plexus encircling every tubule; supplying the connective tissue extending into the layer known as the membrana propria, and even piercing this membrane, and penetrating into the epithelia and the cement substance between them; the nerve-fibres also give off delicate ramules to the afferent vessels, by which they enter the tuft and produce a delicate plexus spun around the capillaries. The distribution of nerves is richer in the convoluted and narrow than in the straight collecting tubules.

Dr. Lafont, in a paper read before the Société de Biologie of Paris in 1885, stated that the administration of nitrous-oxide gas always produced albuminuria. Chloroform, as regards its effect on the kidneys, seems safer than ether. I believe ether to be productive, when administered in nephritis, of a double source of danger; first, the production of paralysis of the renal nerves and their terminal filaments, leading to passive congestion, or inflammation of the renal vessels, glomeruli, etc.; and second, the impossibility, on the part of the kidneys, of the elimination of the ether, and its consequent retention in the system.

Chloroform is, I think, much safer. I have many times resorted to it in uræmic convulsions occurring in the puerperal state, and almost always with benefit; never, as yet, with any unfavorable consequences. The experience of many other—indeed, I believe, of most—physicians has been equally favorable.

Chloroform is, however, administered in operations much less frequently than ether, and I do not think that we are to pronounce its use in chronic nephritis absolutely unattended with danger. What evidence is there, for example, that some of the deaths after its administration may not have been owing to disease of the kidneys?

Fortunately for patients afflicted with renal disorders who suffer from conditions which are dependent upon the knife or upon surgical interference for relief, the skilful local application of cocaine has proved a sufficient anæsthetic in many severe cases.

The literature pertaining to the administration of ether when nephritis exists is not extensive. Among the most important articles are the well-known papers of Dr. Turnbull, of Philadelphia, published in 1880, and of Dr. William F. Norris, of Philadelphia, published in 1881, to which I may add an able paper by Dr. Wesley M. Carpenter, of New York, published in THE MEDICAL RECORD, February 6, 1886, valuable both as containing much original matter and as a *résumé* of what has been written.

If I have given the details of this case with some prolixity, it is because I have wished to do justice to the length and breadth of a common condition of mild albuminuria, apparently of small dimensions, but capable, when aroused by ether, of assuming very gigantic proportions and producing dire results.

HOW TO ABORT A FELON.—Dr. John T. Metcalf writes to the *Boston Medical and Surgical Journal*: "My father was a medical man, who graduated from the University of Pennsylvania in 1816 or 1817. In 1839 I learned from him that a felon could, if seen early enough, be made to abort by wrapping the finger-end with narrow strips of adhesive plaster. When pus has been formed, I learned twenty years ago, from a country doctor, that immediate relief and speedy cure would follow the gentle, slow separation of the nail from its envelope by means of a penknife blade, not too sharp, at the point nearest the seat of greatest pain. Very soon a drop of pus shows itself, and relief comes. I am aware that the plan described is known to many medical men. It was not known to me at the time referred to, when the country doctor showed me how to treat a paronychious patient, whose finger I was about to lay open by the 'free incision down to the bone, taught in the lessons of my great masters."

INTESTINAL CALCULI.—Dr. Hockenhull reports in the *Atlanta Medical and Surgical Journal* a case of a boy who was suffering from tenesmus. Examination of the rectum showed a mass of small hard stones, forming a complete wall, obstructing and distending the bowel. The stones were of a black color, and of a hard, flinty nature, and varied in size from that of a pea to that of the end of the little finger. According to the father's account the total nnmber of stones extracted at the time and passed subsequently was four hundred and two.

Clinical Department.

PARANOIA.

Dr. Philip Zenner, of Cincinnati, reported the following case at a meeting of the Cincinnati Academy of Medicine, held on December 20, 1886: The patient was a married lady, twenty-eight years of age, who had always been in good health, never had uterine disease, and was always regular in her menstrual periods. There was no nervous disease in the family, but both parents and a sister had died of phthisis. She had always been apparently of sound mind, but since the death of her sister had been morbidly apprehensive of becoming herself consumptive, and hardly a month passed in which she did not consult some physician in regard to her lungs. A few days after her second confinement, which had been an easy one, she suddenly thought that she was dying, although there was absolutely nothing abnormal in her condition. Soon after leaving her bed, after this confinement, she began to have delusions that her neighbors were looking at her in a peculiar way, were talking about her, and wanted to injure her and her child. She insisted on moving away from the neighborhood, and was never thereafter content to stay long in one house because of her suspicions of her neighbors. She grew careless about her household affairs, and began to spend money lavishly. She also seemed to become weak in her will-power, and was unable to come to a decision in any matter. Her youngest child died three years after this change in her mental condition, and she grieved a good deal and grew worse rapidly. She now began to have suspicions that some one was trying to poison her by putting cannabis indica in her tea. When Dr. Zenner first saw her he tried to draw her attention to her physical condition, but though her memory and judgment seemed good in other matters, it was impossible to draw her mind away from her delusions or to persuade her that her suspicions were unfounded. She soon after attempted suicide, and was then removed to an asylum. She now has more constant hallucinations, hears voices, and believes that everyone who comes to the asylum desires to see her. Many prominent people, she thinks, are trying to liberate her; numbers have sent her presents of diamonds and costly apparel. There are several features of this case to which the author directed particular attention: 1. The absence of heredity or other predisposing causes. 2. An antecedent condition of slight hypochondriasis. 3. The special kinds of delusion—delusions of observation, of persecution, and of grandeur. 4. All the delusions have a certain logical basis; the basis is faulty, but the delusions follow logically from them.

The case reported was a typical one of paranoia. The most common order of development of symptoms is, first, hypochondriacal sensations; second, delusions of observation; then, delusions of persecution; and, finally, delusions of grandeur. The author then explained the origin of these delusions, and how one naturally grew out of the other. The delusions vary according to the subjective condition of the patient and his surroundings. One with hypochondriacal sensations about the genitalia is likely to have delusions of a sexual cast. One living in a monarchy is likely to believe himself to belong to the royal family, in a republic to be a statesman, reformer, etc. Some of these patients have great intelligence, which they continue to manifest after they have the disease; the majority are above the average intelligence. The disease occurs most frequently in those with a hereditary taint of insanity. There is often, in addition, asymmetry of the skull or other irregularity, indicating a personal predisposition to nervous diseases. The disease often breaks out at great physiological periods, as puberty, etc. It is sometimes caused by great emotional strain, injury to the head, and acute febrile affections, etc. The cases are often the source of great difficulty in diagnosis. The disease may be entirely overlooked. They are the kinds of cases which cause the most trouble in courts of justice. The diagnosis must be based especially on the logical basis of the delusions. The character of the delusions may be of value as pointing to the true disease. The author reported a case in which he was led to a diagnosis of paranoia by the fact that the patient was suspecting his friend of ill-treating him.

Mistakes are often made in supposing cases to be mania or melancholia on account of a gay or sad demeanor. The paranoiac may be either cheerful or depressed, according to the character of his delusion. It is often very important to make a correct diagnosis, because the prognosis in mania and melancholia is much better than in paranoia. The author reported two cases of his own in illustration of the importance of a correct diagnosis.

Paranoiacs often become addicted to drink, and then the alcoholism is likely to mask the real disease. The author reported such a case. The man, who had been sent several times to the asylum, and detained a few weeks as a case of alcoholism, shot at and wounded a man, an act to which he was prompted by his delusions, shortly before the author saw him. This would not have occurred if the true disease had been recognized and he had been kept in the asylum. The prognosis of paranoia is generally unfavorable, though the disease may be at a standstill for years.

The treatment should be of a tonic character.

EPITHELIOMA OF THE AURICLE.

Dr. J. W. Kales, of Franklinville, N. Y., reports the following case to prove that epithelial cancer in this locality may be of most malignant type, and that caustics are often most inefficacious in the treatment of the affection: "T. K——, sixty-five years of age, his father, grandfather, and some others in the family had died, and a brother has since died, of cancer. I cannot give further particulars of these cases. T. K—— first noticed a small scale on the upper portion of the helix of the left ear. From time to time scales were removed, and the cancer doctor applied his caustics. The disease was not cured, nor did the caustics do more than stimulate the growth. The application of the knife was refused. The growth of the epithelioma continued for about five years without affecting the health of the patient. Then it suddenly commenced to grow very rapidly. In two months the whole auricle was involved, and the disease was extending along the external auditory canal. The patient rapidly declined in health. The cancer in a few weeks involved the middle ear, and death claimed its victim. I have seen a large number of cancers, but I never saw one do its deadly work more rapidly than this epithelioma of the auricle."

HERNIOTOMY UNDER COCAINE.

Dr. Albert F. Fuchs, of Fredonia, Wis., writes: "Articles on operations under cocaine are so frequent as to have become tiresome, but I will, nevertheless, venture to contribute another to the vast number. On December 8th I operated on an incarcerated femoral hernia, in a man aged seventy-five years, under local anæsthesia by cocaine. Without going into details regarding the operation, I may be excused when I claim that it was quite difficult. The impediment to reduction was threefold, *i.e.*, an hour-glass constriction of sac, bands of fascia about the neck, and the femoral ring. The gut had been out, and there had been no movement of the bowels for eight days; pain and tympanites had been persistent and increasing for six days. Cocaine solution was applied with a Squibb's graduated pipette to the skin, and injected at numerous points into the cellular tissue. It

was used but once, and in all seventy minims of a four per cent. solution was consumed. The operation was painless, with exception of skin sutures, which were inserted two hours after the application of the cocaine. Recovery was typical of aseptic surgery. In this case local anæsthesia with cocaine was employed, not for the novelty of the thing, but because general anæsthesia was inadvisable. The old man had been suffering for years with putrid bronchitis, the discharge sometimes amounting to twenty-four ounces and over in a day. Momentary dyspnœa was very frequent and aeration of blood insufficient. The idea of giving ether or chloroform in such a case was not pleasant. I do not know, and it is immaterial, whether mine is the first herniotomy under cocaine; and it is hardly probable that I can claim priority of suggestion and use on patients suffering with putrid bronchitis and bronchial dilatation. I may be wrong when I claim that bronchiectasis is a contra-indication to the use of general anæsthesia; theoretically, I should judge it is."

SECONDARY SYPHILITIC INOCULATION OR CONTAGION.

Dr. J. J. Cassidy, of Toronto, writes: "In eighteen years' practice in this city I have treated two cases of chancre on the lip. Both patients were respectable young girls. The history of the first case is as follows: H. S——, eighteen years of age, Canadian, was brought to my office by her mother, to be treated for an indurated sore, situated about two lines below the red margin of the lower lip. The cervical glands were enlarged and tender. Dr. J. E. Graham, of this city, saw the case with me, and pronounced the disease a true chancre. Anxious to learn the cause of the disease, I questioned my patient as to her relations with gentlemen. She informed me that she was receiving attentions from a young man to whom she was engaged to be married. I asked if her affianced was of good constitution. She replied in the affirmative, and stated that she never knew him to be ill; but that, owing to overwork at the shop, he occasionally felt weak and was taking a tonic. I obtained a sight of the prescription, and, as I expected, the principal preparation in the formula was iodide of potassium. I then asked my patient to request her affianced to call at my office. He came. I informed him of my suspicions, but he denied having had any improper relations with women. His penis was free from disease. He had, however, a number of mucous patches on the inner surfaces of the lips and cheeks. He acknowledged having frequently kissed my patient, but stated that he had no idea that poison could be conveyed from his mouth, as he supposed his sores to have been caused by his habit of holding zinc nails in his mouth when working at his trade. I treated the patient for some months with mercurials, and learned subsequently that the pair got married; but their subsequent history has not reached me.

"M. C——, aged nineteen, Canadian, was receiving attention from a young man, and consulted me for an indurated sore, situated at the edge of the red margin of the lower lip. The cervical glands were enlarged and tender. In this instance I was unable to secure the attendance of the donor, and cannot therefore describe the state of his buccal mucous membrane. The young lady, however, stated that he had been taking mercury, and that he had a tender mouth. Mercurials were used in her case until the disease was cured. I cannot say whether these cases were instances of inoculation or contagion. I questioned both patients on this point, but neither of them remembered having had a pimple or an abrasion about the mouth previous to the appearance of the chancre. The presumption would therefore be in favor of contagion. I do not, however, consider the evidence conclusive. The same difficulty must surround the origin of chancre in the male. Not every man who presents himself with a chancre can say for certain that he had no abrasion of the surface of the penis before or during coitus. Everything considered, it is hard to say how the bacillus of syphilis effects an entrance into the body—whether it goes to the blood directly through an abraded surface, or through the lymphatics, or through both these channels. It is certainly, however, more reasonable to attribute syphilis to inoculation than to contagion. The interesting point for practitioners to know is that syphilis may be communicated from secondary lesions. A patient under treatment for syphilis should therefore be informed of this fact by his physician."

A FATAL CASE OF POISONING FROM CAMPHOR.

Dr. Mary J. Finley, of Mansfield, O., sends a report, read before the North Central Ohio Medical Association, of a case of camphor-poisoning. It is asserted that no undoubted fatal case of poisoning from this substance has ever been recorded. The writer states that she has been able to find reports of but two cases in which death was presumably due to an overdose of camphor. One was in a feeble infant, to whom thirty grains of powdered camphor had been given as a vermifuge. The second case was that of a woman, forty-six years of age, who took 184 grains in order to produce abortion. The abortion was produced and the patient died. The smallest dose known to have produced alarming symptoms in an adult is 20 grains; the largest dose recovered from is 160 grains. The following is the case reported by Dr. Finley: "On August 5, 1886, I was called to see a child, aged two years, and found it in violent convulsions. About an hour before that time the mother had heard it cry out in the adjoining room, and the child met her in the door, crying that its mouth was burned. A bottle which had contained an alcoholic solution of camphor lay on the floor; some of the liquid was spilled on the carpet, and the front of the child's dress was saturated with it. After taking a drink of water and having its mouth washed, the child made no further complaint, and appeared to be perfectly well. But in about half an hour it suddenly fell over in its mother's arms, apparently unconscious. It remained quiet for a while, when convulsive movements began, slight at first, but increasing in violence until I saw it. At that time the breathing was noisy and rapid; pulse 180, but not weak; skin moist and pale, but warm. The breath smelled strongly of camphor. I immediately ordered a warm bath, and while that was being prepared gave an enema of bromide of potassium and chloral. While the patient was in the bath the convulsive movements moderated, until there was only a spasmodic jerk of the right arm and side of the chest at intervals of several seconds; this was accompanied by spasm of the diaphragm. In half an hour the convulsions again became general, and the hot bath was repeated; bromide was again given in strong coffee by enema. The movements moderated as before, and finally ceased. Two and a half hours after the ingestion of the poison the child was comatose; breathing slightly sterterous, but normal in rapidity; pulse 100 and of good strength; skin natural in color, warm, and free from moisture. At this time Dr. A. J. Erwin saw the case with me. The child looked as though it was in a natural sleep; and from all previous experience with camphor-poisoning, and from the teaching on the subject, there was every reason to expect that the coma would pass into that condition, and the child would awake convalescent. But in less than an hour the convulsions returned with redoubled fury, and continued unabated until the little fellow expired. Death occurred in about four hours from the time the camphor was taken. The temperature during the final convulsion ran up rapidly. Immediately after death there was a free watery evacuation of, apparently, the enemata which had been ad-

ministered, and which had not been absorbed. The attempted medication by the rectum had, in all probability, no influence whatever on the course of the symptoms. The child could not swallow at any time after I saw it. I was told that it had vomited before my arrival, but the mother afterward informed me that it had not done so. The amount of camphor taken cannot be known with certainty. The mixture from which the child drank consisted of 15 grains to a drachm of sixty per cent. alcohol. It is not to be supposed that the child would take more than a single mouthful of this fiery liquid, and that it swallowed all of that is extremely improbable. It is strongly probable that the child did not swallow more than a drachm of the solution; if so, death occurred from 15 grains of camphor."

NOTES ON ANTIFEBRIN.

Dr. J. L. R. Wadsworth, of Collinsville, Ill., reports the following case, showing the results obtained by antifebrin in malarial fever:

"I received a telegram, calling me to the bedside of my daughter, in Kansas City, Mo., November 23, 1886, and found her suffering with an attack of continued malarial fever, that had reached the twenty-third day, under the excellent care of Dr. Schauffler, of that city. Dr. Schauffler had considered the case a mild one up to the twentieth day; but at this time the conditions were more serious. Temperature now ranged from 101.8° to 104.9°; pulse, 104 to 120; patient restless and sleepless. Medicine now failed to meet expectation. Quinia raked the stomach, not only in antipyretic, but in tonic doses. Antipyrin was followed by great depression, and with but little effect upon the temperature, although its previous use in this case had given the best results. These remedies had to be abandoned; and frequent spongings with water, and the internal administration of peptonoids, milk and whiskey, iron, ergot, and bromidia, were resorted to, to meet indications, with, however, but slight improvement for a few days. On the thirty-fifth day heart-failure threatened early dissolution. Thorough alimentation and stimulation were now pushed. Peptonoids (beef, milk, and gluten), ʒ j., with McMunn's Elix. opii, gtts. v., every four hours, alternated with whiskey, ʒ j., with tr. ferri chlo., gtts. xv., slightly broiled beef (which was relished) and water-toast, as would be taken by the patient. On the thirty-seventh day there was still no change for the better; the temperature was 104.2°. Pulse weak, irregular, and very compressible (so much so that it was with much difficulty counted), and ranging from 120 to 148. Dr. J. D. Griffith was asked to unite with us in the management of the case, and on the second visit suggested the use of antifebrin—a remedy entirely new to us, of which he had recently procured a small sample while in New York City, at the suggestion of Dr. A. A. Smith, who assured him that it could be given under the most unfavorable conditions of the heart's action; and we decided to use it. I gave it with the greatest care, accompanied by hourly observations of the temperature and pulse. Throughout the time of its use no change was made in the treatment last indicated, with the exception that, as on the thirty-eighth day, a slight exacerbation of fever, followed on the thirty-ninth day by a decided one, was noted. Quinia was administered at first hypodermatically, and later by enema. I could observe, however, no effects on the temperature from its use, but the exacerbations ceased.

It would seem, from the data obtained in this single case: First, that antifebrin in five-grain doses reduced the temperature as promptly as either quinia or antipyrin had previously done in this case.

Second, that, notwithstanding the very unfavorable conditions for exhibiting antipyretics, such as we have so far been familiar with, antifebrin gave no evidence of any depressing influence upon the system.

Third, that the effect of a dose of five grains upon the temperature commenced in about one hour from the time of administration, and continued for from three to seven hours, averaging a little less than four hours.

Fourth, that temperature was lowered from 1.3° to 4.5°, averaging a little over 2°.

Fifth, that the pulse-rate was lessened proportionate with the fall of the temperature, following the latter about one hour, both at commencement and termination.

Sixth, that the pulse-rate was lessened from two to sixteen beats, averaging about six.

Seventh, that recurring exacerbations of fever disturb the action of antifebrin; and, in the above conclusions, I have tried to eliminate the results of this disturbance, and enumerate only its effect on the fever without the marked exacerbations.

Finally, fully recognizing that "one swallow does not make a summer," I still offer this observation to the profession, with the hope that others may be led to investigate the drug, and more fully determine its value; and if it should be proven to be a non-depressant antipyretic, it will rank among the most valuable drugs which we possess.

CASE OF INVERSION OF THE UTERUS REDUCED, EIGHTEEN HOURS AFTER ITS OCCURRENCE, BY NOEGGERATH'S METHOD.

Dr. Alonzo Pettit, of Elizabeth, N. J., reports the following case: Mrs. W. G——, aged thirty, was attended in her second confinement by Dr. ——. The labor was natural, and occupied about twelve hours. Two half-drachm doses of fluid extract of ergot were given before the birth of the child, and another before the delivery of the placenta. At the close of labor the uterus was found inverted in the vagina. The patient was in a state of collapse from shock, so that efforts at reduction were not persisted in.

Under the use of stimulants reaction was established, and after the lapse of eighteen hours the operation of reduction was performed—present, Drs. Schleimer, Hough, and Crane.

The patient being etherized, the writer introduced the right hand into the vagina, grasped the uterus, and squeezed it firmly for a few minutes. In this way a good deal of blood was expressed from its sinuses; the uterus was considerably reduced in size, and its walls were rendered softer and thinner. It was then found that an indentation could be easily made in the region of the left cornu. This was gradually extended to include the fundus, and the reduction was then completed without difficulty. Counter-pressure was made continuouly with the fingers of the left hand into the ring of the os, above the pubes. The time occupied was about twenty minutes. The recovery was complete, and was not attended by any unfavorable symptoms.

THREE CASES TREATED BY INHALATIONS OF OXYGEN GAS.

Dr. L. C. Winsor, of Spirit Lake, Ia., reports the following cases: Case I.—A boy, aged eighteen months, was suffering from a severe attack of laryngismus stridulus and chronic bronchitis. The child was weak and anæmic, and seemed to be of a strumous diathesis. Cod-liver oil inunctions were made twice a day, and syrup of the iodide of iron, bromide of sodium, iodide of potassium, and lactopeptin were given internally. This treatment was varied somewhat during two months, but was on the same general line. The child had a fair appetite, but did not gain in flesh or strength. All medicines, except cod-liver oil, iron, and pepsin, were now discontinued, and inhalations given of equal parts of oxygen and nitrous oxide. The first night following this the patient slept much better than for two months before, and he began

from this time to regain his strength. At the end of six weeks he was in very good condition, the lungs were normal, appetite and digestion were good, and there had been a marked increase in flesh and strength.

CASE II.—A woman, aged thirty-four, had been for several hears in delicate health, and had trouble at the apex of the right lung. Upon being called to see the patient, Dr. Winsor found her suffering severely from dyspnœa; the respirations were 57 per minute; pulse 120, small and weak; temperature 99.5°. Physical examination revealed the presence of a capillary bronchitis in the lower lobes of both lungs; mucous râles were heard over the upper lobes, and there was dulness over the lower lobes, and in some cases flatness. The patient had been suffering from dyspnœa for tweve hours, and was gradually growing worse. She was unable to lie down or to walk across the room. Commencing cyanosis was present. Inhalations of pure oxygen were begun at once, and at the end of five minutes, after three inhalations of five breaths each, the patient became easy, the breathing was slower, pulse slower and fuller, and the cyanosis disappeared. Whiskey and carbonate of ammonia were given, a hot flaxseed poultice was applied over the chest, and inhalations of oxygen were given every fifteen minutes. At the end of eighteen hours the inhalations were reduced to once an hour. Two days later the patient was very comfortable and much stronger. Physical examination showed almost entire absence of râles over the upper lobes, the dulness was less marked over the lower lobes, and the chest was expanding well. Respiration, 23; pulse, 80; temperature, normal. The patient continued to improve and made a good recovery.

CASE III.—A young woman, nineteen years of age, who had been subject to severe headaches, biliousness, and constipation, came under treatment for anæmia. There was extreme pallor of the face, lips, and conjunctiva; the pulse was 120; a loud anæmic murmur was to be heard in the neck; the patient was weak and suffering from headache and nervousness. Inhalations were given of a mixture of equal parts of oxygen, nitrous oxide, and air, and tincture of iron and Fowler's solution were also ordered. The inhalations were practised twice a day, five breaths being taken each time. In two weeks the patient was feeling very much better. The murmur had disappeared, the lips and face were of a healthy color, and the headache and nervousness were but little complained of.

Dr. Winsor reports that he has also two cases of pulmonary phthisis in the second stage now under treatment by inhalations of oxygen and nitrous oxide. Both patients have gained in flesh and strength, but they have been under observation for too short a time to enable him to say whether the improvement will be permanent or not.

A CASE OF EARLY DENTITION.

DR. L. C. WINSOR, of Spirit Lake, Ia., reports a case occurring in his practice, of a boy, aged seven weeks and six days, who has already cut the canine tooth in the upper jaw on the right side, the corresponding tooth on the other side is almost through, and the gum over the two central incisors of the upper jaw is swollen, and the teeth seem about to appear. The father and mother are both healthy, and at the time of conception the father was in the habit of walking sixteen miles every day. The diet of both consisted of ordinary food, with the exception of more fruit than is usually eaten. During the latter part of gestation the mother ate oatmeal in considerable quantities. Both father and mother lived in the open air (he being a civil engineer) a greater part of the period of gestation. The child is very healthy in every respect, although he is being fed with the bottle. Dr. Winsor adds that he would be glad to be informed of any similar cases on record.

A CASE OF ACUTE INDO-CYCLITIS WITH PERSISTENT INCREASED TENSION SUCCESSFULLY TREATED BY "BADALL'S" OPERATION.

DR. A. P. GILMORE, of Chicago, Ill., reports the following case: Mr. J. R., aged thirty-five, presented himself at the Eye and Ear Infirmary, August 10th, suffering from a severe attack of what seemed to be idiopathic indo-cyclitis of the left eye. He had never had sore eyes before. There was considerable pericorneal injection, pain over the ciliary body, augmented tension, severe pain, annoying lachrymation, photophobia, and blepharospasm. The usual treatment was adopted, atropine alternating with eserine and massage, leeches, hot water, and anodynes. The eye did not improve, the pain grew worse, and the tension increased. As he had suffered with syphilis ten years ago he was placed on anti-syphilitic treatment, but with no relief. Opiates were given at night to produce sleep. This treatment was continued three weeks, with only occasional relief, followed by renewed exacerbations.

I suggested to him, with some reserve, Badall's operation, to which he readily consented, and the operation was performed without an anæsthetic. The result was most gratifying; the pain subsided, the tension diminished, and the patient slept that night without narcotics.

The next day both subjective and objective symptoms were much improved. I discontinued all other treatment excepting the atropine, which was continued for four days after the operation. On the tenth day the patient was discharged cured, with normal vision. He was seen again on December 1st, and states that his eye has been perfectly well since the operation.

"Badall's" operation consists in neurectomy of the nasal branch of the trigeminal nerve, and is employed by the originator for persistent and painful increased tension in glaucoma. The results of the operation are due to reflex action on the eye through the branches of the fifth nerve. The operation has been indorsed by Abadie in his observations on glaucoma, and adds one more to the class of anti-tonic operations, such as sclerotomy, iridectomy, paracentesis, etc.

BICARBONATE OF SODIUM IN TONSILLITIS.—Some years ago Dr. Giné y Partagás proposed the local use of sodium bicarbonate in acute amygdalitis, and claimed that the drug was of great utility in the abortive treatment of this affection. Dr. Rovira y Oliver has republished, in pamphlet form, a series of articles bearing on this subject, which appeared in different issues of *Gaceta Médica Catalana* during the past four years. He reports a number of cases of simple catarrhal and parenchymatous tonsillitis in which a thorough trial of this remedy was made, and his conclusions are not wholly in accord with those of Dr. Giné. He thinks that in certain cases local applications, made every two or three hours, may prove of service in shortening the duration of the disease, but that the remedy cannot be considered in any sense as abortive of the inflammation. And very frequent applications, every five minutes, as recommended by the proposer of the method to cut short the disease, Dr. Rovira believes to be positively injurious rather than beneficial.

STUDENTS IN THE ITALIAN UNIVERSITIES.—During the winter of 1885–6 there were 14,633 students in the universities of Italy, of whom 3,894 were at Naples, 2,073 at Turin, 1,216 at Rome, 1,163 at Bologna, 1,008 at Padua, and 1,005 at Pavia. The other universities had less than 1,000 students each, and at Ferrara there were but 39. Of the total number 5,195 were students of medicine.

A DISPENSARY IN KABUL.—The Amir of Afghanistan has established a dispensary in the city of Kabul, and has placed it in charge of Dr. Abdul Kadir.

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THE COMPARATIVE DIGESTIBILITY OF THE DIFFERENT NITROGENEOUS FOODS.

THE subject of food is one of perennial interest, and anything new bearing upon it is sure to receive attention. Certain experiments recently made by Dr. J. W. Fraser upon the comparative digestibility of the different albuminoid bodies are *à propos* of this remark. He found first, experimentally, that the different substances—serum albumen, egg albumen, myosin, syntonin, casein, and gluten—varied considerably in their digestibility when acted upon by peptic or pancreatic solutions. Further tests were made, therefore, to determine the exact amount of these differences. The substances were taken in amounts of about two grammes, and were submitted to an artificial digestive process for six hours at a temperature of 100° F. The percentage of the substance digested was determined by dialysis.

The experiments showed that serum and egg albumen head the list in digestibility by pepsin (1.97 and 1.96 per cent.); next came syntonin, or acid albumen (1.25 per cent.) (made by submitting raw beef to a dilute hydrochloric-acid solution); myosin, raw and cooked, was quite high in the scale also (1.03 and 1.04 per cent.); while cheese (casein), cooked albumen, and vegetable albumen, or gluten, stood at the bottom (0.47 to 0.60 per cent.). Cooked myosin ranked at the head in pancreatic digestion, while the raw albumens of serum and egg came next.

Some experiments were made also with beef-tea, with and without the addition of albumen. The main outcome of the experiments was to show that the raw albumens are the most digestible of the albuminoid proximate principles, while myosin, in the form of beef-tea, ranks high. On the other hand, casein, gluten, and cooked-egg albumen are much less digestible.

The pancreatic juice acts especially well on raw albumen, and on acid and alkali albumen. Hence in fevers, when the gastric juice is secreted in very small amount, while the pancreatic gland continues active (Sir W. Roberts), raw albumen, syntonin, or alkali albumen, may be given alone, or in beef-tea. Milk ought to be a rather better food in fevers than in a febrile state in which there is gastro-intestinal dyspepsia.

In adynamic states beef-tea, to which the white of an egg is added, or soup containing syntonin may be used. Dr. Fraser says:

"The experiments with casein and gluten appear to show that there are very few worse foods for a delicate stomach than the usual bread and milk, for, as has been seen, the stomach only dissolves about 0.6 per cent. of these principles in the same time that it dissolves nearly two per cent. of serum-albumen. And the casein in the experiment was in an easier form for digestion than that in which it is usually presented to the stomach, for, as used, it was in a fine granular form, practically freed from fat with alcohol and ether; while cow's milk in the stomach forms dense solid clots, rendered all the more insoluble by the fat, which forms the greater part of their bulk. True, the bread acts as a diluent to the clots, breaking them up, with passages for the gastric juice; but still it is evident that, for digestion by a delicate stomach, bread and milk does not form an ideal food. Whey contains lact-albumen, which is the same as serum albumen, and it is a mildly nutritive food."

QUACK ADVERTISEMENTS AND THE RELIGIOUS PRESS.

WE have often called the attention of religious papers to the gross deception which they encourage by allowing "never-failing cures," "warranted never to fail," etc., to appear in their advertising columns. All these journals may place it upon their records as one of the things proved, that when medical men read such advertisements in religious papers, they conclude that it is more the love of money than the love of truth that influences them, and that these papers are wearing the cloak of hypocrisy.

The Christian Advocate, one of the most influential papers of the Methodist Episcopal denomination, has allowed in its advertising columns the statements that a certain medicine "never fails to give almost instant relief," "is unsurpassed for the relief of," "stops more surely and thoroughly than any other medicine," and other similar expressions, all of which can be found in the deceptive advertisements of the most blatant quacks and pretenders.

Upon the first page of the same number we find the following words: "We ask our readers to turn a deaf ear to those who would induce them to give up *The Christian Advocate* for other papers in or out of the Methodist Episcopal Church." To this we would add, without reference to the mercenary pleading: "The influence of the paper would be greatly promoted were its advertising columns absolutely *pure*." There is no good reason why they should not be. We also find in the same number: "It is a safe rule to beware of all correspondents who offer to do anything *free*, unless they are known to be responsible; and an equally safe rule to put no confidence in correspondents and advertisers who *do not tell the whole truth* in the advertisements."

Again, in the same number we find a noteworthy criticism of one of our daily papers for publishing the indecent proceedings of a notorious divorce case, and in it the following language was used: "Things will go on as bad as they are, or, rather, they will grow worse, until every time decent men and women see indecency in the paper they regularly take, they will send a protest. These should be showered in by the hundred, and by the thousand, and if no change takes place the paper should be dropped." We heartily urge that this advice be applied

by all medical men to all religious papers that publish advertisements of patented and proprietary medicines worded in a way which will *deceive the people.*

For an honest and educated physician cannot be found who will not say, without hesitation, that expressions such as we have quoted above, when applied to any known remedy, have no foundation whatever in truth. To harbor them is to deceive; to practise deception is wrong; to continue to practise it after attention has been called to the error is inexcusably wrong; and the papers continuing it should be rebuked in the way recommended by *The Advocate.*

THE STATISTICS OF SEWAGE AND SEWER-GAS.

Sanitary science concerns itself with some very odd data, which affect the imagination in a manner almost precisely opposite to that produced by idyllic verse. Dr. Tidy, for example, states that 10,000 people pass 600,000 fluid-ounces of urine, and one ton of moist fecal matter daily. Upon this basis it follows that the good people of New York City discharge yearly the Niagarous volume of 173,375,000 gallons of urine, and 50,000 tons of fecal matter. This would be worth to agriculture between two and three millions of dollars; since each man's annual income, simply from his emunctories, is estimated at from $1.50 to $5.00. This is often more than the total annual income from the first years of professional practice.

The sewage of a city contains not only excrementitious matter, but the water from washings of all kinds, vegetable matter, etc. The amount of sewage to each inhabitant is estimated to be 24 gallons daily. For this great city, which believes itself above the average in most things, the total annual sewage amount cannot be less than eleven billion six hundred and eighty millions of gallons. This immense stream of liquid filth flows beneath our city and empties itself into the sewers on each side. In its passage gases of fermentation and putrefaction are generated. The amount varies greatly with the season, the rainfall, etc., and the anosmic statisticians who delve into these matters hesitate to give us any averages here. According to some estimates, however, there are 800,000,000 cubic inches of sewer-gas developed in the sewers daily.

This sewer-gas (in Paris) is found to be composed of carburetted hydrogen, 72.88 parts; sulphuretted hydrogen, 6.70 parts; carbonic acid gas, 12.30 parts; carbonic oxide, 2.54 parts; miscellaneous gases, 5.68 parts. Micro-organisms are also present in it.

Such gaseous mixtures are, of course, not healthful, but, on the other hand, are not seriously injurious to health when quite well diluted, as is the case when the mixture escapes into houses. In large amount, or if continuously inhaled for a long time, languor, anorexia, headache, slight febrile movements may result. The men who work in the sewers of Paris and London are, however, quite up to the average in health.

When, through obstruction of sewers, the sewage matter accumulates, its gaseous emanations are likely to become much more poisonous, probably because it becomes a nidus for the development of pathogenic organisms. In fact, sewer-gas is probably a seriously poisonous substance only when it has been infected with specific germs.

NIAGARA FALLS AND THE INTERNATIONAL CONGRESS.

It is curious to observe with what unanimity all our European exchanges speak of Niagara Falls in connection with a trip to this country next summer. The impression seems to be that, if the Congress is not a large one, the Falls will abundantly make up for it, and that any lack of national representation at Washington will be fully set off by the thoroughly American way in which the water goes over Niagara. We have no doubt that the Falls will do themselves credit, irrespective of ethical differences or geographical misrepresentations. And we are quite sure that our visitors will find that, in the line of precipitous aqueosity, they quite outdo anything in decaying Europe. We do not like, however, to have it thought that Niagara Falls will be the sole salve for possible scientific disappointments. The Falls really are only one hundred and sixty feet high, and are composed only of plain water. One-half is in Canada, and is necessarily somewhat provincial in its style of precipitation.

Let us assure our coming guests that, aside from the Congress and the Falls, we will have other curiosities to present equally capable of making the trip an agreeable and instructive one.

A NEW SYMPTOM IN TUBERCULAR MENINGITIS.

Dr. J. D. Skeer, of Chicago, has recently made a communication to the Pathological Society of that city, in which he claims to have observed a new and pathognomonic symptom of tubercular meningitis. It is, he says, always present in the first or second stage of that disease, and consists of the appearance of a small whitish or yellowish-brown circle, which forms in the iris near to and completely surrounding the margin. When it begins to appear it is indistinct, and resembles a wreath of thin white clouds, the edge of which extends to the free border of the iris. In from twelve to thirty-six hours the whole margin of the iris will be involved, having become of a whitish or yellowish-brown color, and appearing irregular, thickened, and somewhat granular. The changes occur in both eyes simultaneously. They are more apparent in irides of a brown color. The cloud-like appearance is sometimes very evanescent, hence the iris must be frequently examined. In cases of primary tubercular meningitis the circles appear early, but in cases in which there is originally a simple inflammatory change, with tuberculous deposits later, the circles are not seen until the second stage of the disease. Whenever it appears, according to Dr. Skeer, the diagnosis of tubercular meningitis may be made with certainty. We do not understand it to be claimed that it always occurs. Dr. Skeer has observed this sign in twenty cases, in only two of which a post-mortem observation was made. This is a rather slender basis upon which to construct a pathognomonic symptom.

A committee appointed by the Society to report upon Dr. Skeer's paper gives the results of a correspondence with a number of ophthalmologists, including Dr. Marcus P. Halfield, Dr. Adolf Alt, Dr. H. Knapp, and Dr. Bock, of Vienna. None of these gentlemen seem to have observed exactly the appearance described.

In one case observed by the committee, and declared by Dr. Skeer to show the symptom in question, some

doubt is expressed as to whether the condition was not normal, or, at least, had not for a long time existed in the patient, a cachectic and scrofulous child. The question as to whether a syphilis may not be concerned in producing the appearance was not discussed.

Further observations upon this interesting point will, no doubt, soon be forthcoming.

VERY REPREHENSIBLE MEDICAL ADVERTISING.

OUR esteemed contemporary the *Philadelphia Medical and Surgical Reporter*, in its issue of January 22, 1887, published the following startling announcement:

LOCAL CELEBRITY OF A NEW YORK MEDICAL EDITOR.

As Dr. Geo. F. Shrady, of New York, editor of the New York MEDICAL RECORD, is such a stickler for keeping the names of his fellow-editors out of the newspapers, that we respectfully ask his explanation of the following felicitous tribute to his skill, printed in the *New York Tribune* of recent date:

"Dr. Geo. F. Shrady, of New York City, performed a noticeable surgical operation upon a young son of Mr. W. MacRussell, of Saugerties, N. Y., on Saturday last. The child's leg had been broken some time since, and it had become united so improperly that he had lost all use of it. The doctor removed a portion of the defective bone, and reset the limb successfully. Various prominent surgeons witnessed the operation. The patient is doing well."

Will not our brother-editor relieve us by stating that it was "without his knowledge" and "contrary to his wishes?"

We simply answer that, although the operation was performed several years ago, and must have been noticed then, this is the first time that Dr. Shrady has seen the article, and the first time that he knew it had been written. Of course, it can easily be seen that the operation was not a very remarkable one. It simply consisted in sawing off the ends of an ununited fracture and wiring them together. We should like to be able to state that this operation was the first of its kind on record. Probably it was—from a newspayer standpoint.

TENEMENT-HOUSE REFORM.

THERE can hardly be too much done for the improvement of life in New York tenement-houses. At the very best, they furnish poor substitutes for homes, and the poor who live in them are constantly subject to social dangers and unhygienic influences. The attempts of the Sanitary Protective League, the *Morning Journal*, and of numerous public-spirited citizens, to secure amendments to the present tenement-house law, deserve the hearty support of the medical profession. The amendments provide that every tenement shall have a dry cellar, good drainage, ample water-supply, and a janitor; that the owner's name shall be "registered;" that a semi-annual inspection by the Board of Health of all tenements, and an annual report shall be made; that free winter baths shall be furnished; that there shall be electric lights in the tenement districts; and that Leonard Street shall be cut through so as to open up the Mulberry Street "Bend." The last two points are not so essential or important, but a more rigid official scrutiny of the tenement-houses is certainly much needed.

Dry cellars, good drainage, and an ample water-supply will not bring about millennial conditions, but they are quite essential to progress in that direction.

The mightiest steps will only be made, however, when the tenement-house dwellers have learned the gospel of cleanliness and temperate living. Sanitary reformers are too apt to think that when they have furnished soap and towel, their unwashed protégés are at once made clean; whereas, the fact is that there pervades in the tenement-house population a prejudice against wasting in ablutions good money and valuable time that might be devoted to whiskey, tobacco, beer, concert gardens, and rowdy excursions.

GRASS STAGGERS AND THE LOCO WEED.

UNDER the name of the "grass staggers" the writer of an article on cow-boys, in the *Cornhill Magazine*, has described a disease affecting horses in certain parts of Texas and New Mexico. In a recent communication in these pages Dr. J. W. Carhart gave some additional information concerning the symptoms and etiology of this curious affection. The prominent symptoms seem to be due, in part, to a loss of muscular co-ordination; the ponies become weak and staggering, and a slight blow on the head of an affected animal causes him to rear and fall over backward. The animal falls away in flesh, and his coat loses its shining appearance, the hair becoming rough and of a dirty color. The brain as well as the spinal cord would seem in certain cases to be affected, as it is stated that the animals often become absolutely crazy. These symptoms are due to the poisonous effects of a plant known locally as the "loco" weed, so called from the Spanish word *loco*, meaning insane.

Dr. W. Thornton Parker, of Newport, R. I., who saw much of the disease while living in the Texas Panhandle as acting assistant surgeon in the United States Army, sends us a description of this plant. The weed does not grow as high as has been stated, but rather clings to the ground. The plant, even in winter, presents a bright, velvety appearance when all around is burnt up and dry, and the animals eagerly devour it. Dr. Parker writes:

"At a meeting of the Newport Medical Society, held October 6, 1885, I presented specimens of the loco plant, and such information as I then possessed concerning its history, and its poisonous effects upon horses. 'In view of the evident importance to the economical interests of that portion of the country, and possibly to medical practitioners also, that the plant should be still further investigated,' I was directed, in behalf of the Society, 'to bring the whole matter to the attention of the director of the Smithsonian Institution at Washington.' I procured several fine specimens from my friend Dr. Newton, of Mobutu, Tex. (assistant surgeon U. S. Army), and these were duly examined and reported upon. The loco plant is regarded by Professor Gray, of Harvard, as the *Astragalus legum*, a peculiar species of the vetch tribe, abundant in the region of the 'Texan Panhandle,' and agreeable to cattle and horses, but after having been used for some time by the latter, causing a special *madness;* hence its name, from the Spanish loco. As a food its use renders *horses* valueless, and these seem to suffer most from this plant. It seems to have for them the fatal attraction that opium has for too many human beings. It has not yet been proved that cattle suffer very much, if at all."

The symptoms of the disease, as well as the description of the plant which is the apparent cause of them, recall the accounts given by various French and Italian writers of lathyrism. This affection presents the symp-

toms of a spastic paralysis of the lower extremities, the individuals having a markedly ataxic gait. The sensibility of the skin of the lower extremities is greatly increased, there is exaggerated patellar tendon reflex, and the ankle clonus is excited by the slightest movement of flexion of the foot. The plant, to the poisonous effects of which lathyrism is attributed, is also a species of vetch, the *Lathyrus cicera*. The disease attacks chiefly men, but horses have also been known to be affected. Vision seems to be disturbed in grass staggers, but in lathyrism the eyes are unaffected. The poisonous principle of the lathyrus has not been isolated, but experiments upon animals would seem to show that it resides in the healthy plant, and not in a mildew.

Lathyrism appears to be a curable disease. It sometimes subsides spontaneously when care is taken to exclude the vetch from the diet of the patient, and its disappearance may be hastened by the administration of bromide of potassium in large doses. Revulsive applications to the spine are said, also, to be beneficial. Possibly a similar plan of treatment for "locoed" ponies might be followed by good results, although there would be some difficulty in weaning them from their fondness for the poisonous weed.

QUALIFICATIONS IN SURGERY.

The impetus to surgery resulting from the adoption of careful antisepsis and more elaborate technique is producing results that are not altogether beneficial. The impression exists that capital operations, with the help of carbolic acid, can be done by almost anyone, and good obstetricians are turning themselves into poor laparotomists, skilful general surgeons are becoming restively anxious to undertake every kind of difficult abdominal surgery, and young men without special training are boldly undertaking the removal of the viscera and of visceral tumors. The operations of hysterectomy, nephrectomy, gastrotomy, pneumotomy, are in fashion, and a necessity is felt of keeping "in the swim." The result is, we fear, many disasters that are but little heard of, but which are helping to diminish greatly the beneficent results of modern surgery.

The fact is, that some natural aptitude and a great deal of special care and training are required to secure success in difficult capital operations. There are many persons not fitted by temperament or physical qualifications to do such work, but who yet are drawn by a feeling of ambition or false pride into pursuing it.

It would be better for surgical science and suffering humanity if some selective process could be applied to this matter. We do not advocate the creation of specialists who shall do such lines of work alone. This is unnecessary, and it would narrow and cripple the surgeon's art. But it is most desirable that some special qualification be shown before surgeons or physicians be allowed by professional sentiment, at least, to undertake those serious capital operations which are not required by emergencies, but through the slow progress of disease. Our schools give no special training in this direction, although they try to teach several other specialties qualifications in which are much less necessary to the saving of human life. It is time that educational institutions took up this matter.

News of the Week.

A Rare Book.—Dr. Alexander Hadden, of this city, has just become the possessor of a rare book, "The Herball, or Generall Historie of Plantes," by John Gerarde, surgeon, printed in London in 1597. It is a work of 1,392 pages, exclusive of copious indexes, etc., and contains upward of two thousand wood-cut illustrations of trees, plants, fruits, and flowers, which are remarkable for their excellent drawing, as well as for their number. Few copies of this first edition are known to be in existence; the editions of 1633 and 1636, enlarged by Thomas Johnson, apothecary (after the death of the author in 1607), being the ones most commonly met with in book-sales and in the possession of dealers. One of the 1633 edition, on large paper, is reported to have been sold, between two and three years since, in London for about $180.

The Dosage of Opium for Infants.—Dr. A. Walt, of Oakdale, Mass., writes us, enclosing the copy of a prescription for a child under two years of age. In a four-ounce mixture there were four drachms of laudanum, and the dose was a drachm, or nearly eight minims, every three hours. He asks if the druggist was right in making it up. We should say that the doctor was not right in writing it.

A Training-school at Willard Asylum.—This asylum, now the largest and best organized institution for the insane in the United States, has taken another step in advance by the organization of a school for the purpose of training the attendants to the intelligent performance of their duties. The course of instruction will extend to two years. There are now forty persons in the class. We congratulate the managers and the superintendent, Dr. P. M. Wise, on this new feature in their management.

New York State Medical Society.—Additional papers to be presented at the next meeting. Since the publication of the list of papers to be read at the coming meeting of the Medical Society of the State of New York, the following papers have been offered: "Embolism of the Radial Artery Complicating Endocarditis" (in abstract), by F. E. Martindale, M.D., of Port Richmond; "Modification of Chadwick's Gynecological Table" (model and photos), by Charles Stover, M.D., of Amsterdam; "Ametropic Condition of the Eye as a Factor in Cephalalgia," "Treatment of Small Perforations of the Membrana Tympani, with Reference to Formation of New Tissue," by B. H. Grove, M.D., of Buffalo; "New Nasal, Pharyngeal, and Laryngeal Instruments," by Samuel Sherwell, M.D., of Brooklyn; "Seven Cases of solid Pelvic Tumors successfully Removed by Laparotomy," by M. D. Mann, M.D., of Buffalo; "Observations on Diphtheria: Its Complications and Treatment," by E. N. Liell, M.D., of New York. The Society will be convened at 10 A.M. on Tuesday, in the City Hall in Albany.

We learn from Dr. S. B. Ward, of Albany Chairman of the Committee of Arrangements, that the Delaware & Hudson Canal Company's Railroad will sell return

tickets from the meeting of the Medical Society of the State for one-third of the usual fare, on a certificate issued by the Secretary at the meeting that the holder is entitled to the reduction.

A similar arrangement has been made with the New York Central & Hudson River Railroad to sell return tickets at half-fare; and it is altogether probable that the same arrangement will be made with the West Shore Railroad.

THE SPRINGFIELD HOSPITAL, at Springfield, Mass., has lately received a bequest of $75,000 from the estate of the late William Merrick.

NEW BOOKS.—There were 5,210 new books or new editions published in the United Kingdom in 1886. Of these 114 were new medical books, and 57 were new editions of medical works. Only 18 new books on law were published, while there were 616 upon theology.

PROFESSOR C. WESTPHAL has recently celebrated the twenty-fifth year of the beginning of his career as a teacher in the University of Berlin. Professor Westphal was the successor of Griesinger, and to these two are due reforms in the treatment of the insane.

CHOLERA has appeared in Chili, South America.

THE MEDICAL ASSOCIATION OF CANADA will hold its next meeting, under the presidency of Dr. Graham, of Toronto, in Hamilton, Ontario, during the week following the meeting of the International Medical Congress in Washington.

DANGERS OF ANTIPYRINE.—Dr. George D. Hays calls attention (*N. Y. Medical Journal*) to the dangers in the use of antipyrine when given in repeated doses. Very serious collapse has been observed in several cases.

A SIGNAL FAILURE WITH NARCEINE in the treatment of whooping-cough is reported by Dr. L. Eliot, in the *Journal of the American Medical Association*. The dose used was gr. $\frac{1}{12}$, but it produced great drowsiness and entire suppression of urine. Perhaps the narceine was only impure opium.

SMALL-POX IN NEW YORK.—Small-pox has appeared very suddenly and developed with much rapidity in this city. Up to January 11, 1887, there had been but 1 case reported during the winter. In the next week there were 25 cases reported, with 2 deaths. Up to Monday last there had been 32 cases reported, which is more than have occurred in the city since 1882, as shown by the following table:

Years.	Cases Reported.	Deaths.
1881	1,342	451
1882	708	259
1883	26	12
1884	5	..
1885	105	26
1886	109	31

The source of the present contagion seems to have been mainly in the neighborhood of West Fiftieth Street and Seventh Avenue. A few cases have been contracted on shipboard and brought through the quarantine before the disease had made itself known. Yet another source seems to have been the mysterious case of the Mauri family, in Brooklyn, to which it is thought a few of the earlier cases may be traced.

DANGERS OF WATER GAS.—The experience of the people of Troy in the use of water-fuel gas, shows that, unless this gas is made odorous, so that its presence in the air can be ascertained by the sense of smell, its manufacture and delivery in a city may largely increase the death-rate. Water gas having no odor, and being very deadly, may be as fatal to a man who is awake as illuminating gas is to a man who is sleeping in a closed room. This gas is an excellent fuel, and it is cheap. In Troy it was made for nine cents a thousand and sold for fifty cents.

KREATININE AND THE REACTION FOR SUGAR.—Dr. George Johnson states that the substance in urine which reduces picric acid in the presence of potash is kreatinine. This kreatinine, which causes a reaction like that of glucose, may be removed by a simple method devised by the younger Johnson.

DIARRHŒA AND ANTISEPTICS.—In an admirable paper upon the treatment of summer diarrhœa by antiseptics, read before the Academy of Medicine recently by Dr. I. Emmet Holt, it was claimed that the treatment by antiseptics was the most rational and effective method, and that salicylate of soda was the most efficient of this class of drugs. This is a *non sequitur*, however, since salicylate of soda is only very moderately antiseptic, being some fourteen hundred times weaker than corrosive sublimate. The conclusions apparently, therefore, are not in harmony with the argument, although their practical value is not diminished.

RHIGOLENE is a better agent for the production of anæsthesia, in many operations upon the nose, than cocaine, according to Dr. William C. Jarvis. Dr. Jarvis has recently reported (*Eastern Medical Journal*) the results of three years' experience with this agent.

SCOPOLINE AS A SUBSTITUTE FOR ATROPINE.—Dr H. Percy Dunn writes, in the *British Medical Journal*, that the new mydriatic, scopoline, introduced by Pieral Thurey is a useful drug. For some time he has used scopoline at the West London Hospital, not for the purpose of testing its qualities as a mydriatic, but as a drug to supersede atropine in the treatment of keratitis, corneal ulcers, and iritis. He has found that, in the case of troublesome corneal ulcers which had been treated respectively with both atropine and eserine without success, rapid improvement followed the instillation of scopoline. Especially was this good effect shown in cases of severe interstitial keratitis, in which atropine had been previously employed. Again, in rheumatic iritis the use of scopoline was obviously effective in reducing the pain and injection of the globe. Upon no occasion has he seen any conjunctival or other irritation set up by its use, and he has found one grain to the ounce a sufficiently strong solution for all purposes.

DEATH OF AN AGED GERMAN PROFESSOR.—The death is announced of Professor Baumgärtner in the eighty-eighth year of his age. He was for a long time Director of the Medical Clinic at Freiburg.

THE FLATBUSH INSANE ASYLUM.—Dr. John A. Arnold, of Brooklyn, has been appointed medical superintendent of the Insane Asylum at Flatbush, of the Kings County Farm, and Kings County Hospital.

Reports of Societies.

MEDICAL SOCIETY OF THE COUNTY OF NEW YORK.

Stated Meeting, January 24, 1887.

LAURENCE JOHNSON, M.D., PRESIDENT, IN THE CHAIR.

DR. E. WAITZFELDER read a paper on

THE USE OF ACONITIA IN THE TREATMENT OF NERVOUS DISEASES,

in which, after speaking of the physiological action of the drug, he mentioned several affections that he had seen benefited by its administration. It had been, in his experience, especially useful in neuralgias of the trigeminus. Marked benefit may be derived from its use in the treatment of the pain of chronic pachymeningitis, whether syphilitic or not. In the fulgurating pains of locomotor ataxia it was not of any service. Some forms of insomnia could be benefited sometimes by the use of $\frac{1}{100}$ of a grain, especially when aided by bromides.

DR. WEBSTER mentioned a case of pachymeningitis in which he gave $\frac{1}{200}$ of a grain of the drug with benefit, when the pain yielded only partially to morphine. He referred to another case of severe headache in which no benefit attended its use.

DR. LESZYNSKY thought that the drug should be given in granules, so that the exact quantity administered might be known. In general, he thought that aconitia would not be a safe remedy to employ, and that it should be resorted to only after other drugs had been used without benefit. For he had seen very alarming symptoms produced by $\frac{1}{100}$ of a grain. In all affections attended by exhaustion, or liable to be, aconitia should be used with the greatest caution. He had used the oleate of aconitia prepared by Dr. Squibb, with benefit, as a local application in facial neuralgias.

DR. MESSENGER used aconitia externally, as far back as 1853 or 1854, and came to regard it as a dangerous remedy. It had, however, proved beneficial used as an ointment in syphilitic cases, especially when combined with veratria.

DR. O. B. DOUGLAS had given the tincture of aconite with very marked success in one case, and DR. WEBSTER also had used the tincture; but DR. WAITZFELDER said that he had confined his paper to the use of aconitia as a remedy which could be given in a more certain dosage than the tincture of aconite or the fluid extract. He quite agreed with Dr. Messenger and Dr. Leszynsky, that the drug was a dangerous one, and one not to be used when exhaustion was present or likely to be; still many other remedies were equally dangerous, but, with proper precaution, were at the same time very serviceable.

THE RELATIONS OF THE MEDICAL PROFESSION TO THE HEALTH DEPARTMENT,

was the title of a paper presented by DR. JOHN C. PETERS, in which he said that they must always be more or less disagreeable, because the laws of the State of New York forbade any physician from being president of the Board of Health. He urged that action be taken to ask the Legislature, the Governor, and the Mayor of the city to use their best endeavors to place a physician at the head of the Board of Health of this city.

The writer then referred to the case of Brown *vs.* Purdy, and he thought that the Society and Dr. Purdy had a just claim for exemplary money-damages against the Board of Health, and hoped that it would be pressed at the proper time.

Reference was also made to the requirement that the Board of Health notify families with contagious diseases about disinfecting, and which it almost invariably neglects, and did not send directions to physicians, who had to send for them and run a risk of being fined if they did not.

The Croton River and its tributaries abounded with nuisances, which the Board of Health had inspected in full detail, but had neglected to send an official report thereof to the State Board of Health and to the Department of Public Works; the State Board of Health could do nothing until officially informed by the City Board of Health. In the meantime

THE CROTON RIVER INCREASES IN NASTINESS.

The gallant Colonel of the Seventh Regiment, secretary of the Board, could not see the nuisances in the "Shanty Block," although it abutted directly on the grand armory of the Seventh Regiment. This might, by some, be regarded as a greater dereliction of duty than that of the General.

The Committee on Hygiene reported on

THE PROPER DISPOSAL OF MANURE.

The report contained an account of the complaints that were made concerning the manure-dumps, the manure-pits, etc., and the Committee concluded that the present manner of storing, removal, and disposal of the accumulation of stables in this city was done in a most slovenly and careless manner; that the manure-pit was a public nuisance, and a source of annoyance and disease to the neighborhood, and that the only way of properly doing away with this was to press the manure into bales. The process of baling is carried on at the model stables of Ryerson & Brown. The Committee had recommended to the Board of Health that the manure should be baled, so that it might be removed without offence, and do away with the disgusting manure-pit.

THE HEALTH COMMISSIONERS REPORTED

to the Committee on Hygiene that there was but one press in use in the city; that a machine costs $150; that at only one stable was manure being baled (Smith & Stills); that Ryerson & Brown had discontinued baling, and did not intend to resume; that Smith & Stills deliver their bales to Peter Donnelly's manure-dump, where he opens them, as there is no sale for baled manure; that their estimate was that sixty thousand horses were stabled within the city, etc. Michael Kane had found (Kane & Wright) baling manure at the stables to be utterly impracticable. Peter Donnelly stated that baled manure quickly heated in the bale, which rendered it useless for farming purposes; that after it was pressed it was almost valueless, as all its substance had been removed.

The question was discussed by DR. D. B. ST. JOHN ROOSA, who said that it was no concern whatever to the medical profession whether or not the baling of manure was a profitable business for Mr. Michael Kane and others, and that the Board of Health was open to criticism in presenting the subject from that point of view.

IS IT, OR IS IT NOT, A NUISANCE TO HAVE MANURE REMOVED AS IT IS NOW DONE?

was the question to be answered. He moved that the Medical Society of the County of New York request the Board of Health to abate the nuisance of the removal of manure as it is done at the present time in this city.

Until that question was settled, would the Board of Health have the kindness to have the manure removed, as is other offal, between the hours of twelve and three o'clock in the night?

DR. F. R. S. DRAKE seconded the motion in a few remarks, and the Society adopted it unanimously.

THE PRESIDENT AND THE BOARD OF HEALTH.

DR. JOHN T. NAGLE read from the last printed minutes the following quotation from the President's inaugural address (p. 47):

"The manner in which one particular bureau of the Health Department is conducted—that of vital statistics—is a matter of interest both to the profession and the

people. I presume there are few members of this Society who have not, at one time or another, been greatly annoyed, not to say injured in professional standing, by the return for correction of certificates of death upon the flimsiest pretext. No honest man doubts the necessity for rigid scrutiny of such certificates, but such scrutiny can be made without discourtesy, and trivial errors corrected without a degree of annoyance to both physician and friends that is as mischievous as if incited by malice."

He moved that this portion of the President's address be referred to the Committee on Ethics, with the request that the Committee investigate the statement, and report to the Society at an early date.

The Vice-President, Dr. Drake, was called to the chair.

THE PRESIDENT seconded the motion, for the purpose of having an opportunity to discuss it, and the question was further discussed by Drs. Drake, Nagle, Fry, and Irwin, after which Dr. Nagle withdrew his motion, and moved that a committee of five be appointed by the Chair, to which the statement read should be referred for investigation and report to the Society as early as possible.

The Vice-President subsequently appointed as the committee Drs. D. Lewis (chairman), O. B. Douglas, J. S. Warren, W. M. McLaury, and J. W. Warner.

NEW YORK ACADEMY OF MEDICINE.

Stated Meeting, January 20, 1887.

A. JACOBI, M.D., PRESIDENT, IN THE CHAIR.

THE VALUE OF QUININE AS AN ANTIPYRETIC IN PNEUMONIA.

DR. JOHN RIPLEY read a paper [see p. 113] on the above subject, and was followed by DR. MARY PUTNAM-JACOBI, who gave an abstract of her paper on

THE USE OF QUININE IN THE PNEUMONIA OF CHILDREN

read before the Section in Practice, January 18, 1887, the discussion being postponed until this meeting. The paper was based upon observations made in one hundred cases occurring in dispensary practice. Only 33 cases could be followed to their completion, but in an additional number, sufficient to make 53 in all, were fairly satisfactory observations recorded. The ages of the children varied from six months to four years, the average being about two and a half years. The doses were ten grains daily, five at night and five in the morning. There were 33 unquestionable recoveries, and 7 deaths, but the mortality was doubtless more than seven per cent. The modification in physical signs, to which special attention was directed, pertained to the blowing respiration and tubular breathing. These disappeared during the use of the quinine in from two to seven days in 29 cases; in from eleven to eighteen days in 7 cases; and in 1 case after three weeks. The fever disappeared entirely in 32 cases; on the second day in 8 cases; on the third and fourth day in 3 cases; on the fifth day in 5 cases, etc. In 25 cases, defervescence occurred within seven days from beginning the quinine; in 7 cases, later.

The writer concluded that in the pneumonia of children quinine in daily doses of ten grains does not act as an antipyretic, but that it causes defervescence or arrest, temporary at least, of the morbid process. A forced defervescence would be of but little advantage in bronchopneumonia.

The author of the paper then discussed the pathology of pneumonia, and the effect which quinine has in producing an active diastole of the heart, thus explaining the tonic action of the drug on the circulation, although large doses will produce undue diastole. Quinine was indicated when there was no fever, but only consolidation was present.

The conclusion reached was that quinine was specially indicated to avert the tendency to death.

The discussion was opened by DR. J. LEWIS SMITH, who said that a large majority of physicians in this city used quinine in the treatment of broncho-pneumonia, and it seemed to be the remedy most commonly employed in the treatment of pneumonia, whether catarrhal or croupous. His mode had been to give quinine for three or four days only, in what might be called large doses, and then continue it in small doses, with carbonate of ammonia between, and the rate of mortality had certainly been less than it was twenty-five years ago, when the more heroic and depressing measures were adopted. He had been excessively annoyed by the vomiting which had so frequently attended the administration of quinine, and while an emetic might not do any harm, and quinine might be as good an emetic as could be employed, still the drug was administered for other purposes, which rendered it desirable to have it retained. To obviate vomiting the best vehicle he had used was the syrup of the wild-cherry bark.

DR. J. H. FRUITNIGHT'S experience had been similar to that of Dr. Ripley. He had never been convinced that quinine reduced the temperature in pneumonia, but he still continued to use it for its sustaining effect, and for this purpose only small doses were required.

DR. F. A. CASTLE'S experience bore out the statements made by Dr. Ripley concerning the uselessness of quinine in the treatment of pneumonia. He had carried its use to the full degree of toleration by the stomach, and it had seemed to him that it was at the expense of the patients' nutrition. During the last five years he had abandoned its use in pneumonia almost entirely. To sustain the heart he preferred digitalis to quinine.

DR. C. E. BILLINGTON had found that the best method of administering quinine to children was by suppositories. He had taken occasion to study the natural history of pneumonia in children, and had reached the conclusion, based upon observations made in conjunction with Dr. A. A. Smith in twenty cases, that with a very simple treatment this class of patients would recover from it in most cases.

DR. L. E. HOLT had given quinine for its antipyretic effect in twenty cases of pneumonia in children. From sixteen to twenty grains were given to children from one to two and a half years of age. In twelve not much, if any, antipyretic effect was produced; in eight there was total failure. In two or three cases the temperature rose steadily while the quinine was being taken. He had stopped its use altogether during the last two years, because he regarded it as useless in small doses, and dangerous in large doses. Quinine, however, was of decided advantage in convalescence and in persistent bronchopneumonia, and for its tonic effects.

THE PRESIDENT referred to the changes that had occurred during the last third of a century in the profession concerning the use of quinine in pneumonia. At the beginning of that period it was customary to give from one half to one grain of quinine a few times a day, with great expectations, and a large number of children got well. It was true that the tendency was toward recovery in many diseases occurring in children. And therefore it was only in the bad cases that the effect of remedies could be measured. At that time he gave from six to twelve grains of quinine daily, and made for himself the reputation of giving such doses as were liable to kill the patient. But times have changed, and while he seldom goes beyond the doses he then gave, many physicians had given twice or three times as much without endangering their reputations at all. Dr. Jacobi always gives the quinine during the remission of the fever, say five grains in the morning at eight o'clock, and five grains at eleven o'clock, to anticipate the afternoon exacerbation.

It had occurred to him that much of the inefficiency ascribed to quinine was not due so much to the drug as to the fact that the stomach was not in proper condition

to absorb it when taken; for the stomach with a temperature of 104° or 105° F. does not absorb, and the same was true of the rectum. When given subcutaneously it produced its effects rapidly, and the best solution for hypodermic use that he had used was that of the *carbamide* of quinine, which was readily soluble in quantities of four or five grains, in sufficient water to fill the barrel of an ordinary hypodermic syringe. It was not worth while to give quinine when the temperature was no higher than 102°, or 102.5°, or 103° F. He also believed that the large doses spoken of were detrimental. When pneumonia occurs that does not undergo resolution, with increased temperature in the afternoon and considerable cough, the patients will do well under quinine given in the forenoon.

Dr. Ripley said that in a large number of cases in which he used quinine hypodermatically, the result was the same as in the cases in which the drug was retained by the stomach. In none of the cases reported was the quinine vomited. In a large number of instances, it was true, as Dr. Jacobi had said, that the drug would not be absorbed.

With reference to long-continued pneumonia in children, he thought that pleurisy existed as a complication, which produced the prolongation of the disease, and he had found the same conditions in adults.

For hypodermic use he had employed the *muriate* of quinine, which could be dissolved in the proportion of forty grains to the ounce of water by the aid of heat. As the solution cools, crystallization takes place, but the fluid readily becomes clear when again warmed for use.

The President had used a saturated solution of the quinine by the aid of a slight quantity of acid, and had found that the fluid portion was absorbed and the quinine remained in the subcutaneous tissue. He therefore thought it not always desirable to make the solution for hypodermic use too concentrated.

Dr. John E. Weeks then described, and exhibited with microscopes, specimens of a small bacillus that he had observed as of constant occurrence in

ACUTE MUCO-PURULENT CONJUNCTIVITIS,

popularly known as "pink-eye."

The observations included about two hundred and fifty cases. Cultivations of the small bacillus were made with great difficulty, as the microbe would not grow on the ordinary food media. A perfectly pure cultivation was not obtained, but the contamination, a clubbed bacillus, was cultivated pure and experimented with. Inoculation of the conjunctiva of inferior animals and of man with the pure culture of the clubbed bacillus produced no inflammatory results. With the cultivation, which consisted of the small and the clubbed bacillus, the former largely predominating, inoculations of the human conjunctiva were performed, and in all the inoculated eyes the typical muco-purulent conjunctivitis was produced. The inflammation appeared about thirty-six hours after the inoculation in every case. Five days after the inoculation of one eye the other eye became affected.

Microscopical specimens of the small bacillus in the secretion from the conjunctiva, in and on pus-cells, in nearly pure culture with the contamination, and a pure culture of the clubbed variety, were shown. Cultivations in test-tubes of the above two varieties were shown, also cultivations of ten other varieties of microbes taken from the healthy and diseased conjunctiva, including the staphylococcus pyogenes, aureus, albus, and citreus, but not including the coccus of Neisser nor the trachomacoccus of Michel, were exhibited.

The cultivations were in gelatine and on agar-agar. Inoculations of each of the ten varieties, thoroughly tried on the human conjunctiva, failed to produce inflammation. He considered the *small bacillus* to be the cause of acute contagious conjunctivitis, the form mentioned.

The Academy then adjourned.

Correspondence.

OUR LONDON LETTER.

(From our Special Correspondent.)

A CASE OF RECOVERY FROM TUBERCULAR MENINGITIS—ANATOMICAL TEACHING—A PRIVATE MEDICAL SCHOOL—THE SEVERE WEATHER AND DOCTORS—OUT-DOOR AND IN-DOOR PRACTICE—THE WILSON BEQUEST—THE NEW PRESIDENT OF THE PATHOLOGICAL SOCIETY—GUY'S HOSPITAL AND ITS DIFFICULTIES.

London, January 10, 1887.

Tubercular meningitis is generally considered as being almost invariably fatal, but at the last meeting of the Pathological Society Dr. Carrington read a case which goes far to upset this opinion. The patient was a boy, aged sixteen, with a good family history, who had been knocked down by a tricycle. The right knee was injured, and considerable swelling ensued, with impairment of movement. Fifteen months later the left knee began to be affected. He improved under treatment, but in January, 1886, he was admitted into Guy's Hospital for psoas abscess on the right side. In April he left the hospital considerably improved by treatment, but in October was readmitted with another abscess on the left side. He gradually became worse and died. At the post-mortem the pia mater and arachnoid were found thickened, granular, and matted together. On examining the membranes carefully, small, yellow caseous tubercles were found, and their tubercular nature was confirmed by microscopic examination. The brain was healthy; so was the cord, except that the latter was softened. There was meningitis at the lower third of the cord. At the apex of each lung were old phthisical lesions. Two of the lumbar vertebræ were carious, and the right knee-joint was completely disorganized. There was lardaceous disease of the spleen and small intestines, but the other viscera were healthy. Dr. Carrington said he was disposed to lay much stress upon the concomitance of old tubercular phthisis, old cerebral meningitis, caries of spine, and chronic joint disease as evidence of the nature of the meningitis. He believed that it was tubercular, and had been recovered from. The spinal meningitis was probably more recent, and due to the same cause.

The teaching of anatomy has undergone great changes since the days of John Hunter. Before the passing of the Anatomy Act bodies had to be surreptitiously obtained and, being scarce, preserved as long as possible so as to get as much instruction as possible from each. Preservative injections and antiseptic solutions wherewith to preserve the part were unknown. The sights and smells of dissecting-rooms in those days are therefore better imagined than described. Nowadays I have seen many a "part" kept perfectly fresh and sweet for two or three months by the aid of either methylated spirit or carbolized water, a cloth soaked in one of these being wrapped round the part, and the whole enclosed in Mackintosh cloth to prevent evaporation. Dissection is now confined to duly licensed places of study. In London each medical school possesses, of course, a dissecting-room, and a certain amount of dissection also goes on at the College of Surgeons, and some other of the examining bodies. Private dissecting-rooms have almost wholly disappeared, that conducted by Mr. Thomas Cooke being, I believe, the only one extant in the metropolis. Mr. Cooke, although an Englishman by birth, was educated at Paris, where he graduated in arts, science, and medicine. He was for a time Demonstrator of Anatomy at the *École Pratique* of the Faculty of Medicine. Proceeding then to this country,

he became a Fellow of the College of Surgeons of England by examination, and obtained the appointments of Assistant Surgeon at the Westminster Hospital, and Demonstrator of Anatomy in the Medical School. On ceasing to hold the latter post he founded the private medical school which he has since conducted for about fifteen years. Anatomical instruction formed the basis of the school, but physiology, histology, chemistry, materia medica, and operative surgery, are now taught, both theoretically and practically. Mr. Cooke has obtained suitable premises for the purpose in a central part of London, and that part of his teaching which comprises instruction on the dead body is carried on in two iron buildings erected on an isolated piece of ground at a distance from any dwelling-house, and consequently no nuisance is caused. Many students have to thank Mr. Cooke for a large measure of their examinational success, and his persevering efforts have just obtained for him from both the College of Physicians and the College of Surgeons the recognition of his school as a place of medical study in the case of those candidates who, rejected at their first examinations, have to produce certificates of further study. These certificates can now be given by Mr. Cooke. Although his teaching absorbs a large proportion of his time Mr. Cooke also practises, but, practising solely as a consulting surgeon, he does not use his "M.D. Paris," but his name appears on his door-plate with the simple prefix of "Mr."

The late severe weather has been very unfavorable to doctors. As a rule here, the doctors go to their patients —not the patients to the doctors, even when well enough to do so. I am speaking of general practitioners, who constitute the great majority of the profession. To consultants patients frequently pay a visit instead of summoning them to see them, the reason being that, after the first interview, the fee for a home consultation is only one guinea, but two guineas for a visit. Consultants, though, have a certain amount of out-of-door work; an afternoon round being a usual thing among those in good practice. But the latter can keep a carriage, and in this way with a good pair of horses a considerable distance can be rapidly and comfortably traversed over the smooth wood paving now laid down in the leading thoroughfares of London. The unfortunate general practitioner, though, has to make at least two rounds a day, if in large practice, and cannot always, in the poorer districts of London, afford to keep a carriage. As a consequence, he is always out—a fact of which many of his patients complain. A lady residing in one of the most fashionable western suburbs of London remarked to me a few days since that in her district none of the doctors were ever at home when sent for to an urgent case, and said she really thought it would pay a medical man to settle in the district and announce that he would remain at home all day to see patients, and not make a round out. Then, she said, you could always rely on finding one doctor in an emergency. I made the natural rejoinder that to a second patient sending he would be "out." On the other hand, if a suburban practitioner refused to visit at all he would soon find his practice melt away.

Apprehensions are rife that the Wilson bequest to the College of Surgeons may not be wisely used. It is feared that the Council contemplate putting a large sum of it in bricks and mortar, and that in addition a considerable amount of income now derived from ground-rents on houses contiguous to the college may be sacrificed by taking up all the available space for the purposes of the new buildings. The legacy is estimated to produce $1,000,000, but if not cautiously guarded even this large sum may be frittered away in unprofitable undertakings.

Sir James Paget is the newly elected President of the Pathological Society, and may be trusted to maintain the high reputation for honest scientific work that society has hitherto enjoyed.

Scarcely one-third of the $500,000 needed by Guy's Hospital has yet been subscribed.

LONG BEARDS, "SANITAS," AND HIS COAT-TAILS.

To the Editor of the Medical Record.

SIR: "Sanitas" pictures the method of catching diphtheria, or the contagion, by bringing the whiskers, rather than coat-tails, near the patient's face when making a professional examination; and also says most doctors expose their faces by this manœuvre rather than their coat-tails; but some may have idiosyncrasies which may destroy his argument. This is really very cunning, but let us see how it will work if applied to other cases. Diphtheria is not the only disease, nor is examining a patient the only method of getting a load of contagion which may be conveyed by the doctor. I have mentioned that contagions material may be deposited upon door-latches, car-seats, privy-seats, church pews, drinking-utensils, cash, clothing, or most any other substance. Now, I do not know what are the idiosyncrasies of some folks, but out West a man is not so likely to get contagion in his whiskers from car-seats, privy-seats, etc., as he is in his coat-tails. Verily, if "Sanitas" cuts off his whiskers as a measure of sanitary engineering, he must, if he carries out his good intentions, be found standing on his head in many places to save his coat-tails.

I will continue my argument in the words of "Sanitas," merely substituting "coat-tails" for "beards." "The plain facts appear to be this [he should have said these]: The customs of society, and precedents in our profession have decreed that long coat-tails are not suitable for those who attend the sick. The coat-tails carry contagion, and are particularly adapted for the lodgement of germs. Let the physician at least reduce the risks of this kind as much as possible."

To conclude, there are many men, East and West, who wear no whiskers and roundabouts. "Sanitas" can't be distinguished by this dress through his assumed name. Forty thousand doctors, more or less, want to know who "Sanitas" is. He has only to hitch his name to his glory and wake up to fame. Come, "Sanitas!" give us your name, who made you, what county you live in, and we will give you a rest. ROMAINE J. CURTISS, M.D.

DANGER IN TOAST.

To the Editor of The Medical Record.

SIR: A Russian author in a recent novel makes all his principal characters devils. Satan, as chief, directs the lesser devils each to his separate task, which is to corrupt mankind, and to bring sorrow and woe where there had been happiness and rejoicing. With what success the story tells.

If we can conceive of disease as some archfiend, bent upon bringing pain and suffering and helplessness and death to the whole human family, using as his emissaries broods of bacteria, each seeking and finding their own organs to attack, we have here materials for a tragedy equalling in interest Tolstoi's weird tale.

But the foes of health are not all included in the various forms of cocci. There are many other causes of disease that work with charming regularity, and all the more so because they are entirely unsuspected. One of these is toasted bread. An innocent-looking thing, and yet, like the Grecian horse before the walls of Troy, it works sad havoc when once inside.

It is with some hesitancy that I venture to say anything against toasted bread, for did not our mothers and our grandmothers and our great-grandmothers always give it in sickness, and does it not even now hold a sacred place in the heart of every housewife? Surely an idol-breaker is not to be envied, and yet I cannot forbear giving a few plain facts from my own experience tending to show that there are times and circumstances under which it seems to do great harm.

Years ago, a room-mate in college was taken with ty

phoid fever. He passed safely through the disease and was considered convalescent, when near the fourth week his physician permitted him to eat a piece of toasted bread softened in milk. Three hours later he grew worse, had a relapse, and died in a few days.

Some time ago I was called away from my practice, at a time when I had two typhoid-fever patients in charge—one convalescent, the other in the third week. I cautioned the families not to give them toast as they grew better, but as soon as the morning temperatures became normal it was given, resulting in a relapse, though not a fatal one, in each case.

Last summer several dysentery cases suffered relapses in the same way from eating toast.

One illustration will suffice: Mrs. B——, a delightful lady, was taken very severely with this trouble. Large enemata, and hydrarg. bichlor., gr. $\frac{1}{100}$, every two hours brought speedy relief. A diet list was carefully made out and a special and emphatic warning left against toast. But with a perversity of appetite which others may be able to explain, toast was the one and only article of food which she wanted. A liberal bill of fare had no attractions for her; toast alone would satisfy her craving, and toast she ate. (Who is prepared, in the light of this incident, to say that the story of Eve and the apple is a myth?) An hour or two after indulging she was taken with violent pains (I refer to Mrs. B——, not to Eve) and all her symptoms returned in an aggravated form. She was a very penitent and tractable patient during the rest of her illness and has permanently abandoned the use of toast in sickness. I had five other cases, where, after the pain and discharges had ceased, they were brought on again by the use of toast. I have seen it produce pain and vomiting in gastric catarrh, in fibroid induration of the stomach, or whenever there is inflammation of the mucous membrane of the gastro-intestinal tract. In inflammatory diarrhœas of children the anxious mothers are forever giving toast, and it in turn is forever giving pain and more diarrhœa. It would seem as if the gritty particles of charcoal, insoluble in the juices of the stomach, are shoved up and down over the irritable mucous membrane like so much powdered glass, and finding their way into the intestine scratch the inflamed Peyer's patches, or the angry mucous membrane, as the case may be, renewing and aggravating inflammatory action.

We are taught to beware of the danger that is dissolved in our drinking-water, of the germs that lurk in the air, of the mince-pies that linger in our stomachs; ought we not in inflammatory conditions of the stomach and bowels, enforce a strict quarantine against the "pernicious activity" of toast?

E. W. HEDGES, M.D.

PLAINFIELD, N. J.

"REPORT OF A CASE OF TYPHOID FEVER IN WHICH ANTIFEBRIN WAS USED SUCCESSFULLY AS AN ANTIPYRETIC AGENT."

TO THE EDITOR OF THE MEDICAL RECORD.

SIR: Such are the head-lines of an article in the MEDICAL RECORD, January 1, 1887, by George R. Elliott, M.D.

You will please pardon a few questions from an old physician of a sceptical turn of mind, who desires to know something more in regard to the treatment of this essential fever in New York.

The new antipyretic "was used successfully," but the patient died on the twenty-first day of the fever, notwithstanding. How much the treatment and how much the essential poison contributed to the death of the unfortunate young man may never be satisfactorily measured. But the diagram of fever range, and history of treatment, form a reasonable pointer to a rational conclusion, and forcibly remind the reader of experiments by way of advertisement of a new remedy.

Dr. Elliott saw the case at the close of the first week, and in forty-eight hours after this the patient had taken calomel and eighty grains of quinine, the latter in doses of fifteen and twenty grains, and would have received more but for the induced heart-failure and dyspnœa. Under this treatment "the stools were frequent," with tympanites, delirium, and subsultus, with a temperature of 104⅘°, which continued throughout the second week without variation or remission. Now, at the end of the second week, the doctor calls in the "new remedy," and says: "It was evident that unless the temperature could be controlled, the prognosis was rendered correspondingly more grave." Is "temperature" the synonym for the disease? Large doses of quinine had been given, but not to reduce the temperature. Eighty grains were given to "*exclude a possible malarial element.*" "The further use of quinine was abandoned, for, in our experience as an antipyretic agent in typhoid fever, it is useless. I have repeatedly employed it in a large number of cases of typhoid fever in hospital practice, with the *prime object in view* of testing its efficacy as an antipyretic agent, and can *positively state that in no single instance have I ever seen it reduce temperature. In all cases when it did so act*, an unmistakable malarial element has been *proven to exist*" (italics my own). The temperature under large doses of quinine remained the same, and the doctor was satisfied he "*had excluded a possible malarial element and was dealing with an unquestionable case of typhoid fever*," and by means of "antifebrin" kept the temperature below 103°. Still, in this case of typhoid fever, with the "malarial element excluded," and the temperature or disease doing wonderfully well, the doctor seems to have been unhappy, and "*resolved again to try quinine in large doses, and gave fifteen grains*, repeating in four hours." We are told this was done to "*exclude a possible coincidence.*"

But why try quinine again in large doses, when its effects on a case of typhoid fever, with the "possible malarial element excluded," were so positively known to the prescriber? It had been used to expel one possible phantom—why use it at this late and most dangerous juncture to expel another? We are not told that the young man had voluntarily sacrificed himself to the wiles of science; but had he done so, the experiments were as unjustifiable as they were disastrous. It would be natural to suppose caution would be exercised by one who had so frequently employed quinine, in such a large number of cases of typhoid fever, with the prime object in view of testing its efficacy as an antipyretic agent, and who positively never found a single instance—no, not one, where it reduced temperature—still, where it did reduce the temperature in typhoid fever, an unmistakable malarial element has been proven to exist. In early days, or times past, it was not considered true science to prescribe for some prominent symptom of a disease and give no attention to pathological conditions of the suffering organs. It has been said, "Nature is fighting disease," but the physician should not represent the blind man with a club striking at random—he may kill Nature in his vain attempts to aid her.

Does anyone know that antipyretics have diminished the mortality of typhoid fever? Does anyone know it is the temperature that destroys the patient? Is not the ratio of mortality in this fever much greater where the temperature-point is little changed from normal?

Does anyone suppose a rise of the temperature-point necessarily implies an increase of the production of heat? Does anyone know that the rise of the temperature-point is not a conservatory provision of nature? If not, why should the afflicted father agree with the attendants, that the antifebrin effects were simply wonderful, and volunteer the statement that "*no possible relationship could be established between its use and the fatal result?*"

N. E. JONES, M.D.

CIRCLEVILLE, O.

Army News.

Official List of Changes in the Stations and Duties of Officers serving in the Medical Department, United States Army, from January 16 to January 22, 1887.

FORWOOD, W. H., Major and Surgeon. Ordered for duty at Fort Meade, Dak. Terr. S. O. 5, Department of Dakota, January 14, 1887.

BROOKE, JOHN, Major and Surgeon. Ordered for duty as Post-Surgeon at Fortress Monroe, Va. S. O. 10, Division of the Atlantic, January 14, 1887.

GARDNER, W. H., Major and Surgeon. Ordered for duty as Post-Surgeon at Fort McHenry, Md. S. O. 10, Division of the Atlantic, January 14, 1887.

POPE, B. F., Major and Surgeon. Ordered for duty at Fort Clark, Tex. S. O. 15, A. G. O., January 19, 1887.

Medical Items.

CONTAGIOUS DISEASES—WEEKLY STATEMENT.—Report of cases and deaths from contagious diseases reported to the Sanitary Bureau, Health Department, for the week ending January 22, 1887:

	Cases.	Deaths.
Typhus fever	0	0
Typhoid fever	13	4
Scarlet fever	49	10
Cerebro-spinal meningitis	6	5
Measles	651	68
Diphtheria	128	49
Small-pox	18	2
Yellow fever	0	0

HOW TO WRITE A PAPER FOR A MEDICAL SOCIETY.—In an address read before the Stark County, O., Medical Society, Dr. A. W. Ridenour, of Massillon, says many things that will doubtless interest a number of our readers: "The honorable president of this society wrote me a postal card, a short time since, saying that I was to prepare a paper for this meeting. No subject was mentioned, and none has been sent me since, although I have been anxiously waiting, and while waiting thinking what should constitute a paper. One person may consider it necessary to write a long dissertation on some abstruse medical problem in mycology, that he knew but little—*very little*—*about really*, and his listeners still less. During the reading of this paper *one* would be thinking of his patients, another of his deaths, another of his creditors, others of how badly they were used by their brother practitioners, and the balance staring at vacancy. To avoid this, we would require to make our paper *brief* and practical. We might take up the subject of fractures, and after telling you some things you already know, proceed to tell you things you did not know, and did not believe the writer knew either. One doctor would treat all fractures of the long bones with wooden splints, without weights and pulleys; another would use weights and pulleys, without wooden, or, in fact, any splints; another would suspend the limb in mid-air; another would use the Bavarian method with plaster; another would use the plaster *roller*, and so on—each believing his own method the best, and standing ready at any time to testify against all other methods; even for a consideration would swear that shortening was the rule, if his cases presented shortening, and, per contra, should he succeed in getting no shortening in one or two cases, even forgetting those of his cases where shortening was present. We might write about the great honor it was to be called a surgeon by the profession, a butcher by the people, and a murderer by the victims. We might say that the ancestors of the surgeons were barbers; and it might seem suggestive, in view of the great desire to lop off all tonsils of more than four lines in diameter. But it would not be right, in view of the actual condition of affairs, to say that it is not considered an honor any more by the people to be a surgeon, or rather an aspirant thereto. It would not be right to discourage the *gentle* rivalry that exists among nine out of ten of all practitioners, of all ages, condition, and sex, by saying that the more successful they become as surgeons the more they are shunned by the people. But we might say that some—perhaps the greater number of these aspirants after these *false* honors—want to pose before the eyes of their patrons as general practitioners, and not surgeons, always naming and designating some one else as being the surgeon, or, more properly speaking, in view of public opinion, 'The Butcher,' thereby getting the spoils, while the unfortunate *surgeon really* takes the *odium* attached to the name, and nothing more. It might be proper, then, to write a paper advising all thoughtful doctors to practise what they preach, and, *to be fair*, to let the spoils go with the odium; that it is perhaps true that a surgeon cannot live with less than a population of ten thousand, while a physician can live and save money in a population of one thousand; that it is preferable to be a general practitioner; that it seems incomprehensible how doctors will fight for the honor (empty) of being called a butcher by the people. It is true that doctors will almost tear each other's clothes off, so great is this rivalry, to aspire to be a descendant of the *Tonsorial Homo*. How much better it is to dandle the babies, talk about the weather, gossip, be a children's and a ladies' man, with a good *fat* family practice, have plenty of money, and no enemies, no suits for malpractice staring you in the face, and not be liable to the appellation of murderer. The grave will kindly cover the mistakes of the physician, while a crooked limb meets the aspirant to surgical dishonors at every corner. We might say this picture is overdrawn, and while it would be true as regards some, yet not true as regards the majority. But suppose we conclude to enlarge the scope of the paper, and embrace medical politics, general politics, theology, history, and *earthquakes*. If we enter the field of medical politics, we will allow our hair and beard to grow short quickly, avoid every thing that favors the development of positive electricity. Long hair and whiskers suggest combativeness, and, gentle listener, did you never pause to notice that long-haired men, *races*, *women*, and communities were very combative when crossed. Let us not carry this too far, however, lest we get lost. Inquire into the present controversy concerning the International Medical Exposition, and you will find exposed to view long-haired gentry arrayed on one side, and the short on the other This being the exact ground of controversy, it necessarily ends the subject of medical politics, and, as the length of hair forms a prominent feature in general history, we will devote a brief time to a discussion of that mighty subject. The Romans were finally conquered by short-cropped gentry from the north. The Indians were conquered by the short-crop; except recently when the aborigines began using the tonsorial appliances incident to the surgeon, since which time one Indian can manage a regiment of short-crops. The old Puritanical Cromwell cut off the hair of Charles I., and thus made a better man of him. Charlotte Corday cropped the hair of that fiend Marat, and civilization cheered. The long-haired Inquisition was finally abolished by short-bearded Protestantism, and so on. The short-bearded rulers of the old countries were always liberal with medicine, and never to enemies. Now we might say that the length of the hair and beard applies with equal force to the discussion of theology; we might say that liberal ideas go hand in hand with the short growth of the hair and beard. But while we are searching for a subject to write a paper on, we find that we are occupying more than a brief time, and hence we must hurry

along. What is an earthquake? We have various definitions to choose from, but we might say, without being accused of egotism, that an earthquake is an attempt of a portion of the earth's surface to stand on its head, while the remainder growls out its disapproval, the quake being the sensation of fear at the consequence of the act of balancing, if the attempt were successful; hence the trembling. Now having exhausted all the subjects under contemplation, it yet remains to ask, what shall we write about?"

THE PERFORMANCES OF A KANSAS QUACK.—A correspondent living in Leavenworth, Kan., sends us the evidence given before a coroner's jury of a local quack who had been treating the deceased. The quack in question has no diploma, and relies in his practice, as we are told, mainly upon a certain salve. The following evidence tells the story:

"Maria Johnson, being sworn, says: 'I lived here with the deceased and others. She complained, about one o'clock on the night of the 23d inst., of cramps all over her body. I gave her red-pepper tea. It had no effect on her. When morning came I went for Dr. Fowler, and he came at ten o'clock. The deceased was still in pain. He then gave her the half of a dose of morphine he had in a spoon of water, and *in ten minutes* he gave her the other half. Then she went to sleep, and soon waking she complained of an itching and a hurting in her face; she then fell asleep, and we awoke her once. She opened her eyes and went to sleep again, and died at half-past eight last evening; she was subject to inward pains, and suffered in her limbs from rheumatism. Her breathing was hard and rapid before she died. MARIA JOHNSON.'

"George Fowler, being sworn, states: 'I am a practising physician, and was called on the 24th of this month to see and prescribe for a girl named Carrie Carter, corner of Scotah and Third in this city. On my arrival I found her suffering from a severe attack of bilious colic. I gave *five grains of morphine* in two doses, half an hour intervening between the two doses. In my judgment, from the symptoms she manifested, she was *struck with death* when I arrived—her under jaw falling down and her eyes rolling back, leaving nothing but the whites to be seen. Her *pulse had moved up toward her elbow*, which in my opinion is a strong indication of approaching death. I observed the first dose of morphine had no effect in allaying the pain, and in fifteen minutes after giving the second dose she gradually got into a state of stupor. I then made an examination externally of her abdomen, and found small lumps over the surface of her bowels, and to the best of my opinion the pain and nausea accrued from these lumps. I then left the house, and returned between two and three o'clock, and found her sleeping, breathing very hard. Next morning I again called, and she was dead. I *do not think five grains of morphine was too much when divided into two parts, half hour intervening between the doses.* Some time ago I gave her sister, Mrs. Richardson, *six grains of morphine*, and it had the effect of only making her drowsy.'

"Attest: GEORGE FOWLER.

"JOHN C. LYNCH, Coroner.

"I generally buy my medicine at Aller's drug-store, and *use very little* of it."

LUTHER AND MÉNIÈRE'S DISEASE.—Luther, when he was twenty-seven years old, was troubled with giddiness and sounds in his ears, and, as he was entirely ignorant of all physical science, attributed them to the devil. He says: "This toothache and earache I am always suffering from are worse than the plague. I am tormented with a noise and buzzing in my ear, just as though there is the wind tearing through my head. The devil has something to do with it. You don't know what a horrid thing this vertigo of mine is. Here all day I have not been able to read a letter through or even two or three verses of the Psalms. I have not got beyond more than three or four words, when buzz, buzz, the noise begins again, and often I am very near falling off my chair." This was in 1510. In 1530, he writes: "When I try to work my head becomes filled with all sorts of whizzing, buzzing, thundering noises, and if I do not leave off on the instant I should faint away. For the last three days I have not been able to look at even a letter. I have had another visit from the devil. My malady is made up of the ordinary weakness of old age, the results of habitual tension of thought, and above all by the blows of Satan. No medicine in the world will cure them or me." These noises in his head and ears were so confusing that in 1521, when some one gave him a bag of nuts which he put in a box in his bed-room, he thought the devil came and rattled them. He says: "When I put out the lights and got into bed, it seemed to me all at once that the nuts had put themselves in motion, not only jumping about in the sack, but knocking violently against each other, and then they came to the side of my bed to make noises at me. However, this did not alarm me, and I went to sleep; but by and by I was awakened by a great noise on the stairs, as though someone was tumbling down one hundred barrels, one after another. I rose immediately, saying: 'Is it thou, devil? Well, be it so, I commend myself to God.' I returned to bed and went to sleep. Again at Wittemberg I distinctly heard the devil making a noise; he thrice made a noise behind the store, just as if he were dragging some heavy thing over the floor. As I found he was going to keep it up, I gathered together my books and got into bed. At another time I heard him walking about, but, as I knew it was the devil, I paid no attention to him and went to sleep." Once when there was a great storm abroad, Luther said: "It is the devil who does this. Hark! how the devil is puffing and blowing." Then again he thought: "Idiots, the lame, blind, dumb are persons in whom the devil had established himself. All the physicians who try to heal these infirmities, as though they proceeded from natural causes, are ignorant blockheads. They know nothing about the devil or his works."

THE FILIFORM BOUGIE.—A correspondent of the *Atlantic Medical and Surgical Journal*, writing from New York, says: "The most simple application of common sense is in the little instrument known as Banks' filiform bougie. We all can recall times when we have worried for days, trying to dilate an old, inveterate stricture, when we have taxed our ingenuity and the patient's patience, trying all the means at our command, and making but little satisfactory progress. I well recall one case in which it took me three days to get down three ordinary filiform bougies, putting in one and leaving it fifteen or twenty hours, and then passing another down beside it, and so on till I could get in a small steel sound, and thus I was three weeks accomplishing what I could now accomplish, with Banks' filiform, in thirty minutes. Banks' filiform and cocaine now are masters of the situation in most strictures. The only surprising thing about these filiforms is that we didn't think of the same thing a hundred years ago."

THE ARCHÆOLOGY OF ARTIFICIAL LIMBS.—The history of medicine is all but silent on orthopædic surgery. And yet the Greeks and Romans, who, as archæology has shown, had anticipated much of modern dentistry, cannot have been without artificial substitutes for limbs lost in the vicissitudes of peace or war. Herodotus tells us of a captive who amputated his foot to free himself from the shackle, and thus escaped to his friends, who replaced the limb by a wooden one. The Elder Pliny (Nat. Hist., vii., 28, ed. Mayhoff) records the case of M. Sergius, great-grandfather of Catiline, who lost his right hand in his second campaign, was wounded twenty-three times in two campaigns, and thus had the complete use of neither hand nor foot. Twice made prisoner by Hannibal, he twice escaped, after twenty months spent in chains. He fought four battles with his left hand

only, and then made himself a hand of iron, which he fastened on to fight with, and, thus accoutred, raised the siege of Cremona, protected Placentia, and took twelve camps of the enemy in Gaul. Similar substitutes for amputated arms or legs must have been in use even before the time of Sergius; so at least we may infer from the treasure-trove turned up at Capua, in 1885, in a tufa-grave. Among the contents of this tomb was an artificial leg, made of bronze, wood, and iron, the skeleton being entire, save the bones represented by the artificial limb. This (probably unique) relic is now in the Museum of the Royal College of Surgeons of London, and is thus officially described: "Roman artificial leg. The artificial limb accurately represents the form of the leg. It is made with pieces of thin bronze, fastened by bronze nails to a wooden core. Two iron bars, having holes at their free ends, are attached to the upper extremity of the bronze. A quadrilateral piece of iron, found near the position of the foot, is thought to have given strength to it. There was no trace of the foot, and the wooden core had nearly all crumbled away. The skeleton had its waist surrounded by a belt of sheet bronze, edged with small rivets, probably used to fasten a leather lining. Three painted vases (red figures on a black ground) lay at the feet of the skeleton. The vases belonged to a rather advanced period of the decline in art (about 300 B.C.)." Commenting on the above, General H. H. Maxwell says: "It is important to add, from other sources, that the upper third of the leg was hollow, while the lower two-thirds were filled with wood."

THE PECULIARITY OF MALARIAL DISEASE IN CHINA, according to the Hospital Report of the American Episcopal Mission, is that there is a remarkable predominance of the quartan type, and the paroxysms are most likely to come on at night or in the afternoon.

THE MORTALITY FROM LABOR IN CHINA is estimated to be eight per cent., or about four hundred thousand deaths annually.

SMALL-POX AND MEASLES IN CHINA.—Small-pox is spread every winter by the custom of inoculation. This is done by putting the variolous matter on a rag and inserting it up one nostril. No care is taken to isolate patients suffering from this disease. Measles are very common, and it is a well-known fact that one attack of measles here is no protection from the disease at home.—*Report of Hospital for Chinese, Shanghai.*

GONORRHŒA AND STRICTURES. — Gonorrhœa affects the white and colored races with equal readiness, but the colored race is less liable to have strictures follow, according to Drs. McIntosh and Carter (*N. Y. Medical Journal*). Among whites there is about one stricture to four to ten cases of gonorrhœa; among negroes the ratio is about one to twelve to twenty-three cases.

PELVIC HÆMATOCELE.—Dr. Lawson Tait believes that there is no justification for any confusion about this disease. In the Ingleby lecture, recently delivered by him at Queen's College, in Birmingham, he endeavors to clear matters, and finally arrives at the following conclusions (*The Lancet*, October 30, 1886): That in the great majority of cases of extraperitoneal hæmatocele the disease may be left alone, being rarely fatal, and that it is to be interfered with only when suppuration has occurred. That, on the contrary, intraperitoneal hæmatocele is fatal with such almost uniform certainty that so soon as it is suspected the abdomen must be opened and the hemorrhage arrested. In the overwhelming majority of cases the source of the hæmatocele will be found in the broad ligament, and then it can be dealt with, and with every prospect of success. If anyone objects to this, he appeals again to the canon of surgery, which is of uniform application. For surgical hemorrhage, cut down and tie the bleeding point; if a big branch of the femoral artery were bleeding, my colleagues who deal in such cases would cut down and tie it. "Why should Poupart's ligament be a line of demarcation within which this surgical writ will not run? Why should my friend Dr. —— be allowed to do to the external iliac artery what I am prohibited from doing to the internal iliac division?"

CONSTIPATION.—Dr. A. V. Meigs, of Philadelphia, recommends the following combination of well-known drugs, in pill form, for the cure of obstinate constipation: ℞ Ext. belladonnæ, gr. $\frac{1}{12}$; ext. nucis vom., gr. $\frac{1}{4}$; aloes, gr. $\frac{1}{8}$; Rhei, gr. $\frac{1}{4}$—to be taken three times a day. ℞ Ext. belladonnæ, gr. $\frac{1}{12}$; ext. nucis vom., gr. $\frac{1}{4}$; ext. colocynth comp., grs. ij.—to be taken three times a day.

MALARIAL HÆMOGLOBINURIA.—Dr. H. McHatton, of Macon, Ga., has made a study of this subject, and concludes therefrom, first, that this disease is purely malarial; second, that the jaundice is not dependent on impairment of the hepatic functions, but on the coloring matters of the blood following the disintegration of the red blood-corpuscles; third, that quinine is the only medicine which has any controlling influence on the course of the disease.

CONTAGIOUS PNEUMONIA.—In the *Canadian Practitioner*, November, 1886, Dr. J. E. Graham describes a series of cases of pneumonia which he has recently observed. From a study of these cases, as well as the literature of the subject, he is led to draw the following conclusions: 1. That lobar pneumonia is in almost if not in all cases an essential fever. 2. That it is a parasitic disease. 3. That it frequently occurs in the form of epidemics. 4. That it occasionally has appeared to be contagious. 5. That the disease, in an epidemic or contagious form, is nearly allied to erysipelas. 6. That the early and persistent administration of tincture of iron is the proper treatment for these cases.

A TONSIL-KNIFE.—Dr. G. W. Squires, of East Avon N. Y., describes an instrument which he devised, and has employed for some time, to scarify, or incise, the tonsils, which, he claims, possesses many advantages over the ordinary scalpel wound with adhesive plaster. It consists of a rounded blade, attached, longitudinally, to the side of a steel shaft, near its tip. A flat spring, of soft temper, conceals the blade from view, but by simple pressure the latter may be made to advance as far as desired, through a longitudinal slot in the spring. The mouth is opened, and the tongue depressed with a spatula. The instrument is then introduced, and the spring is made to rest against the tonsil. Then, by graduated pressure, the blade is protruded, and the tonsil is incised to any desired depth, without danger of wounding the carotid artery or any of the deeper structures.

THE ADVANTAGE OF COMBINING ANTISEPTIC SUBSTANCES.—Dr. R. Lépine writes, in the *Revue de Médecine*, No. 10, 1886, concerning some experiments made by him with mixtures of different antiseptic substances. He combined mercuric chloride, salicylic acid, carbolic acid, benzoic acid, calcium chloride, bromine, hydrobromate of quinine, and chloroform, each in very minute quantity, so that if it was alone in the solution it would be powerless to prevent the development of the bacillus subtilis in beef-broth. The solution as made, however, when mixed with an equal amount of bouillon, effectually prevented any development of this bacillus. The author believes that, by mixing different substances in this way, very powerful antiseptic solutions may be made, which will, at the same time, be entirely devoid of danger to the human organism.

LADY VISITOR: "Well, how are you this morning, my dear?" Invalid: "Oh, very low indeed." "Have you seen a physician?" "Yes." "What did he say?" "That the malady was mortal." "And who is this doctor?" "It is Dr. X." "Ah, well, he was right; with him all maladies are mortal."

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Original Lectures.

MULTIPLE NEURITIS AND ITS RELATION TO CERTAIN PERIPHERAL NEUROSES.[1]

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LECTURE I.

MR. PRESIDENT, LADIES AND GENTLEMEN OF THE PATHOLOGICAL SOCIETY:

In inaugurating the course of lectures which bears the name of the founder, it is becoming that some expression of gratitude should be made to Dr. Middleton Goldsmith. This can hardly be associated with any form of personal encomium, since that would be as distasteful to him as it is needless before this Society, which owes its existence in part to his exertion. It is proper, however, to emphasize our appreciation of the motives which have led to the establishment of this lectureship. Every one knows that in the rapid progress of medical science, in the great and needful division of labor which that progress has made imperative, there is offered to each individual worker a vast mass of facts which cannot be easily grasped or even readily comprehended. To classify these facts, to weigh their importance, to draw logical conclusions from them, and to present these conclusions in a clear and accessible form is a work of no little magnitude, but of absolute necessity. To accomplish this specialists are at work in every department, and it may be well to emphasize the fact that it is the necessity for their labor, rather than any temporary fashion, that has led to that specialization in medical science which is so often harshly criticised. But special studies lose half their value if they are not made generally available. And it is just here that a lectureship such as this has its use. It enables the results of individual labor to reach beyond the specialist, to be placed before the general practitioner in a simple but comprehensive way. There is, therefore, no means by which an individual can make his influence more widely and permanently felt than by the endowment of such a foundation. For when his personal activity has of necessity ceased with the natural termination of an honorable career he may be sure that, yearly, facts and results are proclaimed in his name of immeasurable service to his successors and of benefit to the profession.

And now, before proceeding to the subject which is to occupy our attention for a time, let me express my obligation for the honor which this Society has conferred in inviting me to inaugurate this course of lectures. It is an honor to which I have no claim, and the duty incurred is one which I feel incapable of performing satisfactorily. I must beg your indulgence in the performance of the task you have laid upon me, and if I succeed in eliciting your interest I know that it will be because the subject we are to study together has a novelty which may compensate for the defects of its presentation.

The discovery of a new disease is never made suddenly. It is a gradual process, and certain stages in the progress toward its complete recognition may be observed. There is first the period of clinical observation, when isolated cases of an unfamiliar and mysterious affection are recorded as curiosities. To this succeeds the period of diagnosis, when, by a comparison of the now numerous cases, a clinical picture of the disease is gradually filled out. In this stage there is much to impede the progress of discovery. For not content with an analysis of symptoms, and a grouping of cases, the majority of observers offer theoretical explanations of the nature of the new affection, and an element of speculation enters which often obscures the facts. There is, however, a real progress in this period, for it is characterized by inductive reasoning from fixed data, and as a result reliable conclusions are reached which make a diagnosis possible. The third period is that of pathological discovery, when the morbid changes lying at the basis of the disease are accurately ascertained. In this stage erroneous theories are eliminated, true explanations for various symptoms become self-evident, and the exact nature of the affection is determined. The disease has now a status of its own. And at first this might seem to be the final stage in the progress of discovery. But it is not. There remains a period of etiological classification, when conditions, formerly supposed to be dissimilar are found to have a common basis, when the pathological changes are ascertained to be the same although the clinical pictures have varied, and when classification of the various forms is rendered possible and a definition of the disease is reached.

Such a gradual advance toward general recognition is well illustrated by the history of multiple neuritis, which is to engage our attention at the present time.

I think we may claim that one of the first cases presented was by an American physician, Dr. James Jackson, of Boston, in 1822.[1] In a paper "On a Peculiar Disease Resulting from the use of Ardent Spirits," which he named arthrodynia, he gives a most graphic picture of what we now know to be one form of multiple neuritis. He says, "This disease comes on gradually. It commences with pain in the lower limbs, but especially in the feet, and afterward extends to the hands and arms. The hands may be affected first in some instances, and in all cases in an advanced state the pain is more severe in the feet and hands than in the upper part of the limbs. The pain is excruciating, but varies in degree at different times. It is accompanied by a distressing feeling of numbness. After the disease has continued a short time, there take place some contractions of the fingers, and toes, and inability to use these parts freely. At length the hands and feet become nearly useless, the flexor muscles manifesting, as in other diseases, greater power than the extensors. The whole body diminishes in size, unless it be the abdomen, but the face does not exhibit the appearance of emaciation common to many visceral diseases. The diminution is especially observable in the feet and hands; and at some time the skin of these parts acquires a peculiar appearance. The same appearance is noticed in a slighter degree in the skin of other parts. This appearance consists in a great smoothness and shining with a sort of fineness of the skin. The integuments look as if tight and stretched, without rugæ or wrinkles, somewhat as when the subjacent parts are swollen; but the skin is not discolored. Yet in this disease there is not any effusion under the skin, and the character which this assumes

[1] The Middleton Goldsmith Lectures, delivered under the direction of the New York Pathological Society, January 25, 1887.

[1] New England Journal of Medicine and Surgery, vol. xi., p. 351.

arises from some change in the organ itself. The most characteristic symptoms are manifested in the limbs, but the pain is not limited to these—and other symptoms are exhibited in other parts. The pain sometimes shoots suddenly up one or both legs, and in one case it frequently passed up the back and then forward to the pit of the stomach. The functions of the stomach are always impaired. The mind is weakened. Sleep is prevented by pain. I believe that this disease is always fatal when the use of spirituous liquors is not abandoned before the powers of the digestive organs are greatly impaired."

It is hardly possible, even at the present day, to add to this description, which portrays in strikingly vivid language the main features of one form of multiple neuritis.

The next observations of importance in establishing a clinical picture were made by Magnus Huss, who, in his work upon chronic alcoholism, in 1852, gave a very complete description of alcoholic nervous symptoms, dividing the cases into paralytic, anæsthetic, convulsive, epileptic, and hyperæsthetic forms. But not content with the clinical side, he advanced to pathological hypothesis, and ascribed all the various symptoms to lesions in the central nervous system. His description was amplified and completed by Lancereaux, in 1864, in an article upon alcoholism in the "Dictionnaire Encyclopédique des Sciences Médicales." But the pathology of the disease was still a matter of speculation.

In 1855 the great work of Duchenne was published,[1] and in it a number of cases are recorded which we now recognize as multiple neuritis. In these cases there were sensory disturbances, consisting of pain, numbness, and loss of sensation; motor disturbances, consisting of paralysis, with atrophy, especially marked in the distal parts of the extremities, and attended by a loss of faradic contractility in the paralyzed muscles; and cyanosis, coolness, and increased sweating in the affected limbs. Duchenne grouped these cases together under the title "Paralysie Générale Spinale Subaigüe Ascendante," because he thought a gradually advancing lesion in the spinal cord, from below upward, would explain the symptoms. It is true that he found no macroscopic change in the cord in the only case in which he made an autopsy. But when, under the leadership of the French school, from 1860 to 1865, the microscopic appearances in nervous lesions began to be studied, the hypothesis of Duchenne at once appeared to be verified, for it was found that such symptoms as numbness, pain, and anæsthesia were associated with lesions of the posterior columns of the spinal cord. And it was also proven that atrophic paralysis was caused by a degeneration of the ganglion-cells of the anterior gray horns of the cord, not necessarily visible to the naked eye. It seemed an easy step to the conclusion that when these symptoms occurred together the entire spinal cord was the seat of disease, and that wherever they occurred a spinal lesion was progressing. The pathology of this form of paralysis appeared to be definitely ascertained, and for many years the fallacy of such a conclusion was not detected. All atrophic paralysis was invariably referred to spinal lesions, because spinal lesions may cause atrophic paralysis.

But facts rarely accommodate themselves permanently to theories, and after a time a mass of very unwieldy facts began to accumulate. Cases of atrophic paralysis without spinal lesion were observed, and these threw doubt upon the theoretical pathology. The period of true pathological observation had begun, and gradually went on to completion. In 1864 Dumenil reported the following case, which deserves to be cited, as it is the first in which an autopsy established the existence of a wide-spread disease in the peripheral nerves as a cause of sensory, motor, and trophic symptoms.

Observation I.—A tailor, aged sixty-one, after suffering from prickling in the toes for two weeks, was suddenly taken with weakness in the left arm and right leg, and, a few days later, by the same paresis in the left leg. Within five days he could not stand or walk. The paralyzed feet hung flaccid, and were totally paralyzed; the thighs could be moved freely. Anæsthesia was found on the right sole and calf, and on the left foot and outer side of the leg. In the muscles of the hands and forearms a considerable atrophy, with paralysis, developed. The faradic contractility was abolished in the paralyzed muscles. He complained of a painful numbness in the paralyzed limbs up to the knees, and involving the hands. No improvement; death in four and a half months.

Autopsy: Spinal cord and nerve-roots were normal. The finer nerve branches in the legs and hands were degenerated, only a small number of nerve-fibres being found. Single fibres showed no continuous myelin sheath; but this was segmented and granular. There was an increase of connective tissue, and many fat-cells in the nerves.[1]

This case being of an anomalous character excited very little attention. Two years later, however, Dumenil reported another, and published an elaborate article on peripheral paralysis, in which he said: "My own observations have convinced me firmly that many paralyses of obscure origin are caused by true spontaneous neuritis."[2] The second case, which with the first led to this conclusion, has been cited by Leyden as a case of neuritis, but it does not conform to any of the types of multiple neuritis, and is open to some doubt from the results of the autopsy, since numerous foci of disease were found in the spinal cord. We therefore pass it by.

Singular as it may seem, an interval of ten years elapsed before another case of similar nature, accompanied by a record of *post-mortem* examination, appeared. Then Eichhorst, of Berlin, reported the following interesting history:

Observation II.—A female, aged sixty-six, after suffering daily for two weeks from a chill, fever, and sweat, attended by malaise, anorexia, and constipation, noticed an œdematous swelling of both feet and legs, and complained of pain in the abdomen. A week later, on admission to the hospital, these symptoms continued. The urinary examination was negative. Three days after admission she suddenly felt a severe boring pain in the left leg, shooting into the toes, and at the same time a profuse sweat broke out over the calf and back of the foot. A few hours later a total paralysis was found in the muscles supplied by the peroneal nerve, with a marked anæsthesia. The electric reaction, at first preserved, was found two days later to be gone. After six days, during which she had no further chills, a paralysis of the anterior tibial nerve developed, and soon after of the posterior tibial nerve also. One week later entire paraplegia of the legs, with anæsthesia, severe pains, continual sweating, increasing œdema, and loss of the tendon reflexes had ensued. There followed a paralysis of the left, and soon after of the right, radial nerve. Moderate fever continued, and albuminuria appeared. Three weeks after her admission sudden blindness developed, the ophthalmoscopic appearances being at the time normal; the patient then lay in bed with eyes closed, unable to move a limb. The extremities perspired constantly, and were tender, any pressure on nerve-trunks being very painful. In the face there was no trouble, and the senses were normal except that of sight. No trouble in swallowing. Nothing abnormal about the viscera during the entire disease. No irregularity of pulse or respiration. Death occurred on the forty-fourth day of the disease.

Autopsy: Spinal cord absolutely normal. The nerve-trunks in the bicipital grooves appeared intensely red to

[1] Electrization localisée.

[1] Dumenil: Gaz. Heb., 1864, p. 203, and Gaz. Heb., 1866, No. 4.

[2] Ceque j'ai observé me donne la conviction intime que bien des paralysies de cause obscure ont leur point de départ dans les véritables névrites spontanées, Gaz. Heb., 1866, No. 4.

the eye, the perineurium being discolored and the endoneurium blood-red. The same appearance was noticed in the large nerve-trunks of the arm in their course, as well as in the left tibial nerve. The microscopic examination showed a remarkable distention and tortuosity of the blood-vessels of the perineurium; the vessel-walls were thickened, their nuclei increased. In the vicinity of the vessels a large number of lymphoid cells were found, which everywhere followed the vessels and infiltrated the connective tissue. There were also numerous fatty cells. The connective-tissue fibrillæ of the perineurium were thickened, shining, and swollen; their nuclei were increased and partly infiltrated with fat granules. Similar changes were seen in the endoneurium, viz., numerous extravasations of blood, which separated the nerve-fibres and compressed them. The nerve-fibres showed marked degeneration, especially those lying next the endoneurium, consisting of disintegration of the myelin sheath, and a distention and spindle-shaped swelling of the individual nerve-fibres. The nuclei of the sheath of Schwann were not increased in number, but the protoplasm about them was coarsely granular and opaque. The cells of the endoneurium were everywhere wanting, being replaced by fatty granular cells, even between the uninjured fibres.[1]

This is the first case to be found in which the microscopic appearances are described with sufficient detail to be satisfactory. It is to be noticed that here the lesion was an acute inflammation, and was, apparently, a diffuse one, both interstitial tissue and nerve-fibrils being involved in the process. That it was primarily an interstitial inflammation, and that the affection of the nerve-fibrils was secondary, due to pressure of the products of exudation, is clearly seen in the fact that those fibres were more seriously affected which lay near vessels, while the deeper fibres in large bundles were not at all degenerated. The appearance of the fibres was such as occurs in any degeneration from pressure. There is no reason, therefore, to believe that the process began diffusely.

As to the symptoms in this case, it is to be remarked that they were ushered in by an acute febrile movement with chills, and that severe pain was an early and prominent symptom; also that œdema and sweating were present; and that the optic nerves were involved.

The clinical picture in the following case of Joffroy, published three years later, was somewhat different, as was also the pathological condition.

Observation III.—A washerwoman, aged thirty-three, in the last stage of phthisis, was admitted to the hospital on March 5th. In February she had noticed a rapidly increasing weakness of her legs, and at the time of admission she could not walk or raise her feet from the bed. She could flex the knees but not extend them. There was no contracture, and the muscles were relaxed and flabby. Sensations to pain, temperature, and pressure impressions were normal, but the muscular sense was lost, and reflexes were diminished. She showed such a degree of mental weakness that tactile sense could not be tested. She had no shooting pains, no loss of control over bladder and rectum, no bedsores. Two weeks later the arms became involved in the paralysis, and atrophy, inco-ordination, and loss of muscular sense, with fibrillary motions, developed within a few days. There was great diminution of faradic excitability in all the paralyzed muscles. At the end of ten days the arms were entirely powerless, but retained their sensibility. On April 7th she died.

Autopsy: A chronic meningitis of the brain explained the mental symptoms. The spinal cord was normal. The nerves appeared normal; but microscopic examination showed very marked degeneration in all the nerve-trunks, but especially in the sciatic, radial, and ulnar nerves. There was a segmentation of the myelin sheath, which at places was reduced to a finely granular mass. Many sheaths of Schwann were filled with this mass, others were empty, The nuclei of the sheaths of Schwann were increased in number. All the spinal nerve-roots were normal. The changes in the nerves were followed down into the fine terminal branches in the thenar muscles. The muscles were atrophied and showed fatty degeneration.'

Here, in contrast with the preceding case, it is to be noted that the lesion was not attended by congestion of the nerves, or by any exudation of lymphoid cells, or by marked interstitial changes. The affection was a true parenchymatous inflammation, with degeneration of the myelin sheath and axis cylinder. As a result, the macroscopic appearance of the nerves was not such as to attract attention, and it required a microscopic examination to demonstrate the changes present. Joffroy, who reports this case as one of general spontaneous neuritis, finds the lesion identical with that observed in cases of localized neuritis occurring from cold, from lead palsy, or as a sequel of the infectious diseases. In regard to the symptoms, also, the case contrasts strongly with the preceding one. The patient had phthisis. The disease advanced more slowly. Pain was absent, and the sensory symptoms were by no means prominent, the muscular sense being the only one affected.

In 1880, the following cases were observed by Leyden, in the Charité Hospital of Berlin, in both of which changes were found in the peripheral nerves. They are cited because they not only enlarge our clinical picture, but confirm the pathological conditions already described.

Observation IV.—A sailor, aged twenty-five, was suddenly seized with severe tearing pains in all four extremities, especially near elbows and knees, which were swollen, white, indurated, and very tender. The pains shot down the limbs, and were attended by formication and by diminished sensation in fingers and toes. High fever accompanied the onset. In a few days, as the fever subsided, a paretic condition with muscular atrophy was noticed in the forearms, and to a less extent in legs and feet. A gradual improvement took place in the course of a few months in the lower extremities, but the paralysis and atrophy in the arms increased in degree, and the appearance of the hands resembled that seen in lead palsy. There was a reaction of degeneration in the muscles paralyzed. A year after the onset he died of chronic nephritis.

Autopsy: A sclerotic atrophy of both radial nerves was found. The nerve-sheath was thickened. The muscles were considerably atrophied. The anterior spinal nerve-roots, as well as the cells in the anterior horns, and the entire spinal cord, were normal. In the nerves of the lower extremities no changes were visible.[2]

Observation V.—The second case was that of a merchant, aged thirty-one, who noticed about Christmas, 1878, a feeling of formication in the toes and sole, of first the left, and then the right foot. This continued more or less severe, without any motor disturbance, until July 10th, when he found his legs heavy, and in two days this had so increased that he could not walk. At the same time a constant formication in the soles of the feet was felt. Within a few days similar symptoms appeared in the arms and hands. On admission to the hospital on July 17th, he complained of weakness of the legs and loss of sensation in the hands, also burning pain in the left hand and inner side of the left knee. The motion of the legs was powerless and uncertain, and there was paresis of the extensors of the hands and fingers. Sensation was much impaired in the periphery of the extremities; the tendon reflexes were abolished, the muscles flabby. The electrical examination showed a loss of faradic contractility, and a great diminution of galvanic contractility in the affected muscles. The liver was tender, and there was a slight jaundice; pulse 70; no fever. The paralysis

[1] Eichhorst: Virchow's Archiv, Bd. 69, p. 265. 1876.

[1] A. Joffroy: Arch. de Phys. norm. et path., 1879, pp. 172–198.'
[2] Leyden: Charité Annalen, 1880.

increased slowly in extent and severity, and was accompanied by paræsthesia, pains, and diminished sensibility. The muscles atrophied, and showed the reaction of degeneration. After six weeks slight fever began, with rapid pulse aud dyspnœa. The pains affected the upper part of the thorax, and the spinal column became sensitive as low as the eighth dorsal vertebræ. During the last days small rapid pulse, severe dyspnœa, purely costal respiration, delirium, somnolence, and exhaustion were noticed, and on September 3d he died.

Autopsy: The spinal cord was normal, the gray and white substance intact, the large ganglion-cells in normal form and number, though a few seemed to present a slightly swollen, glassy appearance which Leyden considered the first indications of trophic disturbance. The nerve-trunks, especially the radials and peronei, presented the appearance of a high degree of fatty degeneration and atrophy. The myelin sheath was either wholly wanting or greatly divided and split up, and in a state of fatty degeneration; the axis cylinder seemed varicose from deposits of fat in it. A marked infiltration of lymphoid cells, especially between the endoneurium and nerve-fibres, was noticed, more marked along the course of the small arterioles. These changes were present in a greater degree in the peripheral branches of the nerves, and seemed less in the nerves near the cord.[1]

It will be noticed that here the lesion corresponded quite closely to that in the case of Eichhorst.

Impressed by the striking features of these two cases, and by their similarity, both in clinical symptoms and pathological changes, to the cases of Dumenil, Joffroy, and Eichhorst already cited, Leyden undertook a review of atrophic paralysis.[2] He showed the confusion which had come from blindly referring all such cases to a single lesion in the spinal cord. He proved that previous authors had erroneously grouped together several diseases distinct from one another, both in their course and in their pathology. One of these is poliomyelitis anterior, acute and chronic, occurring in children and adults; a disease of the anterior gray horns, with local foci of inflammatory degeneration; a disease characterized by motor and trophic symptoms of peculiar distribution and typical course. A second of these is progressive muscular atrophy, with its corresponding bulbar affection, glosso-labio-laryngeal paralysis; a disease of the anterior gray horns and of the motor cranial nerve-nuclei, of a chronic degenerative, non-inflammatory kind; a disease characterized by trophic and motor symptoms of different distribution, nature, and progress from the first disease considered. A third disease is pseudo-hypertrophic paralysis, in which a fatty deposit in the muscle conceals the real atrophy in progress; a disease of childhood, but not due to any spinal affection; a disease of the muscular tissue itself. And lastly, he drew the picture of multiple neuritis, a disease due to degenerative processes in the nerves, independent of spinal lesion; a disease characterized by atrophic paralysis, associated with marked sensory symptoms, and with tenderness of the nerve, by a typical course, and, usually, by a favorable termination. By this article Leyden established the status of multiple neuritis as a distinct disease. Its symptoms were analyzed. Its lesion was described. The pathological stage in the progress of its discovery was complete.

When the characteristic features of a new disease have once been clearly pointed out, it is remarkable to observe how rapidly cases of it begin to be recognized. In the two or three years which followed the appearance of Leyden's article, numerous cases of multiple neuritis were reported in the journals. And many physicians, reviewing their records, recognized, in cases previously obscure or imperfectly diagnosticated, typical pictures of the new disease. It may be well to consider a few of these cases in order to complete our clinical knowledge of the affection.

Observation VI.—A female, aged thirty, of intemperate habits, but otherwise in good health, after suffering from formication, coldness, and pains in her feet and legs for some months, noticed an œdema of both legs. This increased rapidly after a few days, and the swollen limbs became painful to touch or pressure, and were the seat of severe lancinating pains, which were worse at night. Within a month the same symptoms appeared in the arms and hands, and a marked hyperæsthesia developed in all the extremities, as well as a rapidly progressing paralysis; so that, on admission to the hospital, six weeks after the appearance of the œdema, it was impossible for her to lift her limbs from the bed, or to extend her hands and fingers. The movements in the distal portions of all the extremities were much more impaired than those near the trunk, and in the paralyzed extensor muscles the faradic excitability was almost abolished. Heart and kidneys normal. She had some fever, and was delirious at night. The symptoms increased rapidly; the paralysis became total; respiration became difficult; the heart rapid, and a week after admission to the hospital she died.

Autopsy: Tubercles in the lungs. Brain and cord were normal. Nerve-roots were normal. In the nerves of the extremities marked degeneration was found, especially in the radial and tibial nerves. By the side of a small number of empty sheaths were found fibres, whose myelin was segmented and in drops, separated by empty spaces. The axis cylinders were indistinct. There was no increase in the nuclei of the sheath of Schwann.

In discussing the case Dr. Lancereaux made the diagnosis of alcoholic paralysis, assigning the lesion to the nerves, and differentiating it from a myelitis or a meningitis. In so doing he criticised the view of Wilks and Lockhardt Clarke, who still considered alcoholic paralysis as a central disease. He cited another case, very similar, of a female aged thirty-three, in which the symptoms were pains, hyperæsthesia, tenderness, paralysis, with atrophy in the extremities, but in which œdema was not so marked and came on quite late in the course of the case. The same lesions were found. To these he added two cases in which the patients manifested the same symptoms, but had never drank. They were both, however, sellers of varnish, and lived day and night in an atmosphere permeated by alcoholic vapor, from which he concludes that chronic alcoholic poisoning can occur by absorption through the lungs—a valuable observation, but hitherto not confirmed.[1]

The following case was reported by Grainger Stewart, together with two other cases which resulted in recovery.

Observation VII.—A male, aged thirty-one, noticed during August, 1880, a weakness of the legs, and during the following month a pain of a prickling character in the legs and feet. These increased in intensity, and in October a similar feeling came on in the fingers and hands, accompanied by loss of power and stiffness. When seen, in November, he had tingling pain in both legs from the knee to the back of the foot, with numbness and feeling of cold in the toes and plantar surfaces, so also in the hands, to a less extent. No girdle pain or formication. Sensibility to touch was diminished in the legs and hands. Transmission of impressions was delayed. Sensibility to heat, tickling, and pain were all diminished, as was also the muscular sense in the feet. There was no nystagmus, although he complained of things dancing before his eyes. Sight was normal. There was no incontinence of urine or fæces. The skin reflexes were absent in the soles, but normal in the abdomen and groins. The knee-jerk was absent. Voluntary motion was greatly impaired in legs and arms, and attempts to use the muscles caused pain. Electric irritability of the

[1] Leyden: Zeitsch. f. Klin. Med., 1880.
[2] Leyden: Zeitschrift für Klin. Med., I. Ueber Poliomyelitis und Neuritis.

[1] E. Lancereaux: De la Paralysie alcoolique, Gaz. Heb. de Méd., 1881, p. 120.

muscles and sensibility of the skin was much diminished. There were no vaso-motor or trophic changes. His mental condition became changed during his stay, his memory was impaired, and he seemed drowsy. A month after his first examination he died of pneumonia.

Autopsy by Dr. D. J. Hamilton: The median, ulnar, and tibial nerves showed great changes. With a low power of the microscope the bundles of fibres appeared to be affected by fatty degeneration. With a high power it was found that the axis cylinders were swollen so as to form a number of fusiform bodies in the course of the nerve-tubes. These at parts were divided into a number of round homogeneous colloid bodies. When set free these bodies underwent a fatty degeneration, forming compound granular corpuscles. In some fibres the axis cylinder was totally destroyed, nothing but a quantity of fibrous tissue remaining. The cords of the brachial plexus and the sciatic nerves were normal. Slight evidence of secondary sclerosis in the spinal cord was found in the columns of Goll and in the direct cerebellar columns. Its origin could not be explained.[1]

It must not be supposed, from the fact that all the cases so far cited were fatal, that death is always the result in multiple neuritis. This is very far from the truth, and probably, if the mortality had been greater, the pathology of the disease would not so long have eluded search. The fatal cases have been brought together in order that the pathological appearances observed might be noted and compared, and might become somewhat familiar by repetition. It is time to enter upon the more careful study of their pathology, and so, for a time, let us leave the clinical features of the disease.

It may not be out of place, before proceeding to discuss the changes occurring in inflammations of the nerves, to review the normal anatomy of a nerve.

THE HISTOLOGY OF A NERVE-FIBRE.—When a nerve-trunk is dissected, the connective-tissue sheath or perineurium enclosing its fibres torn away, and the individual fibres set free by teasing from the finer connective-tissue strands or endoneurium which bind them together, it is possible to distinguish certain parts, by means of appropriate methods of staining.

There is *first* the axis cylinder, Fig. 1 (*a*). This is made up of a number of primitive fibrils arranged longitudinally and continuous throughout the length of the nerve. The fibrils are cemented together by a substance which appears finely granular. Each cylinder is supposed to represent a prolongation of a single nerve-cell; but whether the individual fibrils of which it is made up come from the same cell or from different cells, or from the fibrillary network in the central organ surrounding the cell, is a matter of hypothesis.[2]

There is, *secondly*, the myelin sheath surrounding the axis cylinder, Fig. 1 (*b*). This is not a continuous tube, but consists of a series of little tubes, or interannular segments, placed end to end. The point of junction of two adjacent segments is indicated by a constriction in the contour of the nerve-fibre, and if the myelin be stained with osmic acid it is seen to be deficient at these constrictions. If, by any means, the nerve-fibre be broken, the myelin in any segment will run out and collect in drops, showing that it is a semi-fluid substance, of fatty nature.[1]

FIG. 1.—A Normal Nerve-fibre. *a*, Axis-cylinder; *b*, medullary sheath; *c*, sheath of Schwann; *d*, node of Ranvier; *e*, incisure of Schmitt; *f*, nucleus of the sheath of Schwann.

There is, *thirdly*, a connective-tissue membrane surrounding the myelin sheath, the sheath of Schwann, Fig. 1 (*c*). This, like the last, is made up of segments cemented to one another at the point of constriction of the fibre. This constriction is known as the ring or node of Ranvier, Fig. 1 (*d*), and at its situation the sheath of Schwann is the only covering of the axis cylinder. On the inner side of this sheath, and half-way between two nodes, is found a nucleus, Fig. 1 (*f*). The sheath and node are made evident by staining with nitrate of silver, while the nucleus is seen best by staining with carmine or acid fuchsin. The mutual relation of the sheath of Schwann and the myelin sheath, are best understood by the study of their development, segment by segment. Ranvier[2] likens the production of any one segment of these sheaths to the production of a fat cell from a nucleated cell. Every nucleated cell is surrounded by a layer of protoplasm. As the fat forms it collects within the layer of protoplasm in the vicinity of the nucleus, in the form of drops which finally unite into a mass. This mass is surrounded by a very thin layer of protoplasm and by the cell-membrane. On one side of it is seen the nucleus flattened out against the inner side of the membrane in the layer of protoplasm. Now, if each segment of the sheaths corresponds to the fat cell, and the myelin to the fat, the structure of the segment is clear. The membrane of the fat cell is represented by the sheath of Schwann. At the point of constriction of the nerve-fibre this membrane is cemented to that of the adjoining segment. Beneath the membrane, and flattened against its side, is the nucleus of the segment, lying in a layer of protoplasm in the middle of the segment. This layer of protoplasm forms a lining everywhere to the sheath of Schwann. With that sheath it is reflected around the axis cylinder. Within the lining, in a state of semi-fluidity, is contained the myelin, which will run out if the limiting membrane is broken. By appropriate staining fine lines can be seen passing between the outer and inner layers of protoplasm, through the myelin sheath, the so-called incisions of Schmidt, Fig. 1 (*e*). These have been considered little trabeculæ of protoplasm within the segment in the midst of which the myelin lies. Recent staining methods seem to indicate that they belong to the sheath of Schwann and are connective tissue. The layer of protoplasm lying against the axis cylinder is the layer which was formerly described as the sheath of Mauthner. Some authorities consider that a layer of connective tissue similar to the sheath of Schwann surrounds the axis cylinder, but this is still uncertain. Thus the nerve-fibre consists of a central conducting strand, surrounded and insulated by a series of tube-like segments of fluid contained within a membrane, which are joined to one another, forming a double protecting sheath.

Individual fibres are associated in bundles held together by fine connective-tissue cells whose nuclei can be seen in a carmine or fuchsin stained preparation, lying always adjacent to, but outside of, the sheath of Schwann.[3] This has been called the endoneurium, while the connective-tissue sheath surrounding the entire bundle is named the perineurium. Capillary vessels with free anastomoses run within the nerve, their walls lying adjacent to the in-

[1] Grainger Stewart: Edinburgh Medical Journal, April, 1881.

[2] Whatever their origin, it is certain that they pass together in the axis cylinder to the periphery, and that there the axis cylinder as such terminates, while the individual fibrils branch out in various directions, and, joining with other fibrils from other cylinders, form a fine plexus within the organ to which the nerve as a whole has gone. It has been thought possible to trace individual fibrils of the plexus into individual epithelial cells. Such is their termination in various internal organs and in the skin. This is not, however, the only manner of termination of the axis cylinder, for individual nerves can be traced directly to terminal organs, such as the terminal plates upon the muscle, and the terminal bulbs and corpuscles in the skin; in which cases no division or branching of the fibrillary constituents of the axis cylinder has been discovered. The termination in each of the organs of special sense is still different. The axis cylinder can best be seen by the acid fuchsin stain.

[1] The myelin sheath is not a necessary constituent of all nerve-fibres, for the majority of the nerves of the sympathetic system are devoid of such sheaths. Nor does the myelin sheath of the nerves of the cerebro-spinal system extend from end to end of the axis cylinder. For the axis cylinder first receives its sheath at some little distance from the cell from which it issues, and at its termination, where it breaks up into branching fibrils, the myelin envelope ceases. Throughout the course of the nerve, however, the myelin sheath is present in the cerebro-spinal nerves, forming a protecting envelope, and probably acting as an insulating substance as well.

[2] Ranvier: Leçons sur l'Histologie du Système Nerveux. tome i., p. 115.

[3] These connective-tissue cells which lie between individual fibres have been recently the subject of study by Adamkiewicz (Adamkiewicz, Ueber Ruckenmarkschwindsucht, Sitzungsbericht der Wiener Acad.. Bd. 91, Abth, II.), and Rosenheim (Rosenheim, Arch. für Psych., xvii., p. 830). The former regarded them as nerve-corpuscles, but the latter has proven that they are true connective-tissue cells. They are best seen in specimens stained with a double staining of

dividual fibres, and thus affording a perfect nutrition.[1] Lymph-spaces also have been demonstrated within the nerve-sheath, but not among the fibres.[2] That the interfibrillary spaces of the endoneurium, however, open into these peri-fascicular lymph-spaces is probable, from the fact that they do so in other organs. While it is evident that the nutrition of the axis cylinder is derived from the circulatory fluids, it is probable that it is only at the nodes of Ranvier that the absorption takes place, since elsewhere the myelin sheath interferes with osmosis. Thus, if the nerve be put in nitrate of silver, it is only opposite the nodes that the axis cylinder becomes stained.

THE PATHOLOGY OF MULTIPLE NEURITIS.—In studying the pathological processes which occur in multiple neuritis, it is necessary to keep these various elements of the normal nerve in mind, since each element is subject to changes. The exact character of these changes is best understood by observing the results of nerve-degeneration artificially produced in animals. And a study of this will not be out of place here, for, as we shall see, the changes occurring in multiple neuritis correspond quite exactly to those produced by experimental degeneration.

In considering the pathology of degenerative neuritis we enter at once upon a mass of controversial statements. It would seem to be a simple matter to establish, by observations upon nerves which had been experimentally compressed or severed, the changes which ensue in nerve-injuries. But, as a matter of fact, there is, perhaps, no field of experimental pathological inquiry in which the results have differed more widely. In the first place, it is probable that the rapidity and even the character of the changes differ in different animals. Secondly, various methods of investigation, of hardening, dissecting, and staining the nerves, seem to have resulted in the production of different appearances. And, lastly, it is by no means certain that a uniform pathological process goes on after experimental lesions.

After a lesion of a nerve-trunk, a process of degeneration sets in at the point of injury, and involves a small portion of the central end and the entire peripheral part of the nerve, from the seat of injury onward. This process may be more or less complete, and may, or may not, be followed by a second process of regeneration in the diseased nerve. It is necessary to distinguish between the degenerative and regenerative processes; and, inasmuch as it is affirmed that they may proceed simultaneously in various parts of the same fibre,[3] it is not strange that the confounding of the two should have increased the confusion in the statements.

In early times it seems to have been a question whether the destruction of a nerve was ever recovered from, and while the majority of authorities rightly contended that this was possible, there were those who denied it vehemently. Steinneck,[4] in 1838, seems to have determined this finally in the affirmative, using both the physiological and anatomical data at his disposal to good advantage. The exact processes of degeneration were first carefully studied by Nasse[5] and Waller,[6] and their results having attracted attention to the phenomena in question, a host of investigators have followed their lead. The most careful examinations of the entire series of changes which go on in degeneration and regeneration have been made by Ranvier,[7] Philipeau and Vulpian,[1] and Dejerine,[2] in France; by E. Neumann,[3] S. Mayer,[4] and Wolberg,[5] in Germany; by Hanken,[6] in Holland; by Schiff[7] and Tizzoni,[8] in Italy, and by Weir Mitchell,[9] in America.

The majority of writers upon nervous diseases and upon general pathology seem to have followed Ranvier closely, without any mention of the fact that other authorities differ from his conclusions. It will be necessary here to present the various views which are held.

THE PROCESS OF DEGENERATION.—When a nerve is compressed by a ligature or forceps without sufficient force to rupture the sheath of Schwann, the myelin is driven away from the point of pressure in both directions, and the axis cylinder is disintegrated and mingled with it. It might be supposed that the nodes of Ranvier would prevent such a driving back of the myelin, but they seem to offer but feeble resistance, so that the entire fibre on either side of the compressed spot is bulged out for some little distance, the sheath of Schwann between the distended portions being left empty or containing only a little granular débris. In a short time changes of a degenerative character are observed on both sides of the point of compression. Those on the central side are limited to the immediate neighborhood of the injured spot, and, according to Ranvier, do not affect the nerve for a distance greater than a centimetre from the point of compression.[10]

On the peripheral side of the point of pressure the degeneration is extensive, involving the entire nerve down to its finest terminations. The process is held by some to be a gradually advancing one along the fibre from the point of pressure outward, while others believe that it begins at once in the entire length of the nerve. The first change noticed is a breaking up of the myelin sheath into segments, and then into smaller masses and drops (Fig. 2, *a*, *b*), which finally undergo further disintegration, either by a fatty or albuminoid degeneration, or by a process of saponification, until a finely granular mass alone remains. Tizzoni states that this process is partly due to the activity of migratory white blood-globules, a view which Ranvier supports, and which Neumann and Mayer deny. If, as seems probable, the connective-tissue cells of Rosenheim take an active part in all processes of nerve inflammation, it is possible that these are the bodies which Tizzoni mistook for leucocytes. Ranvier holds that the segmentation of the myelin is due to the increase of the protoplasm about the nucleus of the segment, and that it is this protoplasm which replaces the myelin. Neumann holds that the granular mass resulting from the disintegration is not protoplasmic, but is a débris capable of acting as the basis for processes of regeneration after undergoing a chemical change. All authorities admit that the granular mass may be gradually absorbed, leaving the sheath of Schwann collapsed and empty, or containing only granules of débris or nuclei (Fig. 2, *c*, *d*).

As the myelin undergoes these changes the axis cylinder

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anilin gentian violet and methyl blue, though they can be seen distinctly in fuchsin stained preparations, as has recently been demonstrated by Dr. Van Giesen, of the Laboratory of the College of Physicians and Surgeons. They appear on nerves after the age of five, and increase in number as the individual grows older, so that in elderly persons they are very numerous. They are round or spindle-shaped, and frequently appear to have little thorn-like processes. In addition to these connective-tissue cells there are fine fibrils of connective tissue, and bands of tissue lying between the bundles of nerve fibres.

[4] Ranvier, l.c., p. 253.
[2] Ranvier, l.c., p. 258.
[3] E. Neumann: Ueber De- und Regeneration der Nerven, Arch. f. mikros. Anat., xviii.
[4] Schmidt's Jahrbuch., Bd. 26, S. 102, 1840.
[5] Müller's Archiv, 1839.
[6] Comptes rendus, 1852, vol. 34, p. 675.
[7] Leçons sur l'Histologie du Système Nerveux.

[1] Gaz. Méd. de Paris, 1859, Comptes rendus à la Soc. de Biol.
[2] Arch. de Physiol., 1875, p. 567.
[3] Arch. f. mikros. Anat., xviii., 302, 1880.
[4] Zeitsch. f. Heilkunde, ii., 1881.
[5] Deut. Zeitsch. f. Chirurgie, xviii. u. xix., 1883.
[6] Internat. Monatsch. f. Anat. und Histologie, Bd. iii., 1886; Fortschritte der Medicin, 1886, December.
[7] Comptes rendus, 1854, vol xxxviii., p. 448, and Zeitsch. f. Wissen Zool., 1856, vii., p. 145.
[8] Centralbl. für. Med. Wissen., 1878, Nr. 13.
[9] Injuries of Nerves, 1872.
[10] Some recent investigations of Friedlander and Krause throw doubt upon this statement. (Fortschritte der Medicin, December 1, 1886). They have discovered a considerable degree of atrophy in the nerve-trunks in the stumps of amputated extremities, and they traced this atrophy upward through the nerves, and into the posterior nerve-roots exclusively. They conclude, therefore, that the fibres affected are entirely sensory fibres. The axis cylinder is only slightly affected by the atrophy, but the myelin sheath is wholly destroyed. Inasmuch as the degree of atrophy in a nerve-trunk was about the same whether the amputation had been made near the body or near the end of the limb, they conclude that only certain of the sensory fibres degenerate upward. And as the tactile corpuscles and terminal bulbs are only found in the most distal parts of the extremities, it is suggested that only those sensory fibres degenerate which arise from these so-called tactile bodies. If this is proven to be true by further observation, the tactile bodies will assume the role of trophic centres for the sensory nerves. And in this case anything which interrupts the connection between the tactile bodies and the posterior spinal ganglion will produce a centripetal degeneration in the nerve. Hence in neuritis from section or pressure, as well as in multiple neuritis, such secondary degeneration is to be expected and should be looked for.

usually becomes involved. Some authors, it is true, believe that it remains intact, and that, although deprived

FIG. 2.—The Process of Degeneration. (After Ranvier.) *a*, Segmentation of myelin an daxis-cylinder, with increase of protoplasm; *b*, disintegration of myelin into drops, increase of nuclei, partial absorption of débris; *c*, complete absorption of the disintegrated mass, leaving the Schwann sheath empty, or containing only débris and nuclei; *d*, the same, nuclei alone remaining.

of its function, it is capable of resuming that function at any time when regeneration of the myelin sheath has taken place. Such authorities as Erb, Charcot, Weir Mitchell, and Wolberg have given their approval of this view. Ranvier believes that the protoplasm of the nucleus attacks and destroys the axis cylinder as well as the myelin. Neumann holds that it is split up into segments like the myelin, becomes mingled with it, and undergoes the same process of chemical change, or absorption; and Mayer agrees with this view. (Fig. 3, *a*, *b*, *c*.)

The sheath of Schwann also takes part in the process of degeneration. When that process has fairly begun numerous nuclei are observed lining this sheath in each interannular segment. They may have come by a process of segmentation of the original nucleus of the segment, as Ranvier holds. But Neumann and Mayer have shown that they appear as early at the extremities of the segment as they do in the vicinity of the nucleus, and they therefore conclude that they are a free formation originating in the granular or protoplasmic mass. Tizzoni thinks them emigrated corpuscles. The most recent view of all is that of Rosenheim, that they come from the connective-tissue cells along the sheath which divide and multiply, and show powers of emigration as soon as the process of degeneration begins. When the granular mass is absorbed these nuclei remain scattered along the sheath of Schwann, and it has been suggested that, when in an empty sheath a new axis cylinder appears, it owes its existence to these nuclei, which arrange themselves in a line and develop into the new fibre (Wolberg). If no regeneration occurs they disappear gradually, and then the only relic of the former nerve-fibre is the empty, collapsed sheath of Schwann, which remains as a connective-tissue strand.

The increase of nuclei and connective-tissue fibrils in the endoneurium and perineurium which accompanies the process of degeneration, aids in the transformation of the nerve into a band of connective tissue.

The degeneration which affects the nerve is continued to the terminal plates upon the muscle, and these are changed into a mass of granules and finally absorbed, a connective-tissue plate being left.[1] Whether any changes occur in the sensory terminal organs, such as the tactile corpuscles or terminal bulbs, has never been ascertained. Those who believe that the individual axis-cylinder fibrils terminate in the epithelium of the skin may cite the trophic changes which often occur on the surface as evidence that this covering of the body shares in the nerve changes.

Authorities seem to agree that the same results follow a division of a nerve that are observed after its compression, with the difference that at the point of section the myelin runs out of the sheath of Schwann. The cut central end of the nerve becomes swollen into a bulbous extremity by a growth of connective tissue.

Whether a true union of the divided ends ever occurs is still a matter of uncertainty. The majority of authori-

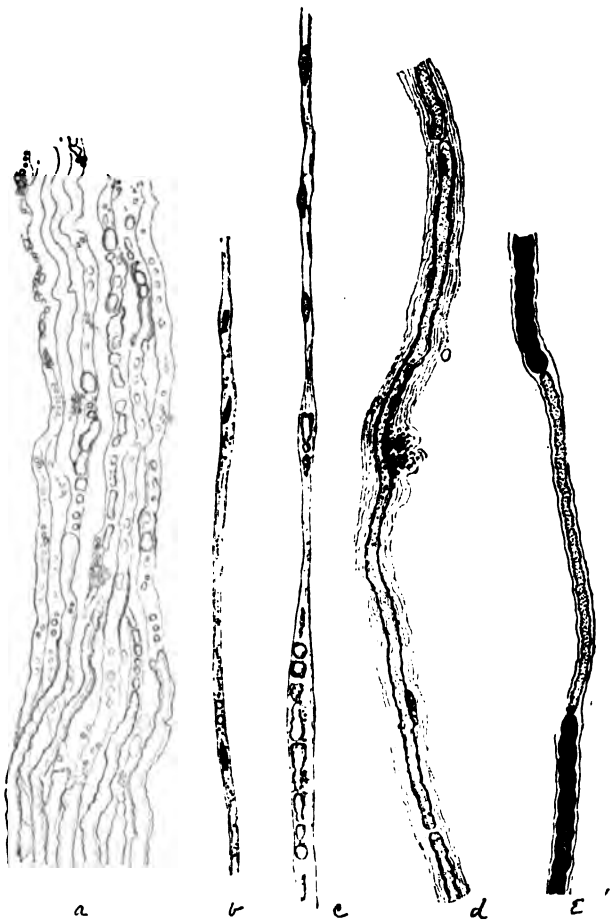

FIG. 3.—The Process of Degeneration and Regeneration going on in Normal Nerves. (After Mayer.) *a*, Segmentation of the myelin; *b*, contents of sheath of Schwann reduced to granular mass; *c*, sheath of Schwann, containing only débris and nuclei; *d*, granular mass in the sheath in process of regeneration; *e*, regeneration of a single segment after degeneration.

ties, following Ranvier, affirm that while a primary coaptation of the ends by an exudate which is secondarily transformed into connective tissue may occur and hold the ends in position, no true primary union of nerve-

[1] Gessler: Die Motorishe Endplatte und ihre Bedeutung für die Peripher-Lähmung. Leipzig. 1885.

fibres is possible, and under all circumstances the degenerative process already described goes on to completion. Glück, however, claims to have observed an actual union of the two ends, with re-establishment of function, at a time too early to have admitted the occurrences of degeneration and regeneration; and Wolberg, approaching the subject from the surgical side, and considering the results of nerve-suture, inclines to the same view.[1]

In the midst of such contrary statements, what conclusion can be reached as to the actual facts? It seems evident that but one conclusion is certain, viz., that under different circumstances different processes occur. The various observers are equally trustworthy. It is impossible to choose one set of conclusions rather than another, or to rely wholly upon one series of experiments, however capable the observer may be, for they all rest upon repeated observations. It is undoubtedly true that in some cases the degenerative process, so graphically pictured by Ranvier, from the beginning segmentation of the myelin down to the final result in the connective-tissue strand, the relic of the empty sheath of Schwann, does go on; while in other cases of a less serious nature the destruction is less complete, and there remains a fibre consisting of a sheath of Schwann, containing a granular mass which may be either an axis cylinder or a mass capable of developing into an axis cylinder under favorable circumstances. If this is the case, we can affirm that brilliant surgical successes, with rapid restoration of nerve function after suture, are possible when the partial degeneration is present, but are impossible when the total destruction of the nerve-fibre has occurred. And statistics show that there is a certain percentage of operations which fail of any result, though repeated on the same nerve.

It is evident that future research should be directed, not so much to determine which of the processes described occurs, as to settle under what circumstances the one is produced rather than the other. And such research will have an eminently practical bearing, inasmuch as it will also demonstrate under what circumstances nerve-suture is likely to be attended by success.

The Process of Regeneration.—After the process of degeneration has gone on for some time in the nerve-fibre, it may cease, and the process of regeneration may begin. With regard to the method of this process two widely divergent views are held. Ranvier and his followers claim that the new nerve is wholly a product of the central end of the injured nerve, growing out from it and making its way along the track of the peripheral end, which takes no active part in the process. Neumann and Mayer, on the contrary, believe that the regeneration goes on in the peripheral end of the cut nerve, segment by segment being formed successively, beginning at the point of injury and proceeding outward, the entire nerve being built up by the union of each distal segment with the one lying centrally to it, until this process has reached the end. These various views demand a more exact statement.

Ranvier describes several ways in which the new fibres issue from the central end.[2] He has seen the central end of an individual nerve-fibre become hypertrophied, and from this swollen part a single new fibre start out already medullated. He has also seen a single axis-cylinder grow out, and then divide into two, or even more, axis-cylinders, each of which develops into a complete medullated nerve; or from the swollen central end of a single fibre several medullated and segmented fibres may originate, or one medullated fibre may be sent out with several non-medullated fibres coiled about it; or, lastly, a simple axis-cylinder branches out without a medullary sheath, divides into two, and each of these in turn divides into two, and so on until the sheath of Schwann, which had originally but one axis-cylinder within it, contains as many as eight or more (Fig. 4, *a*). These new fibres appear like a brush upon the end of the divided nerve, and wind about each other, forming a sort of plexus. By the aid of the cicatricial tissue, which usually joins the central end with the degenerated peripheral end, the bushy, branching fibres are directed outward toward the periphery. And when they reach the peripheral end of the cut nerve they insinuate themselves into the old remaining sheaths of Schwann, or between those sheaths, and grow on and outward till at last they reach the termination of the peripheral end, and the regeneration is complete. The terminal plates upon the muscles are renewed by a production of protoplasm in the plate. The description given by Neumann and Mayer is very different. It will be re-

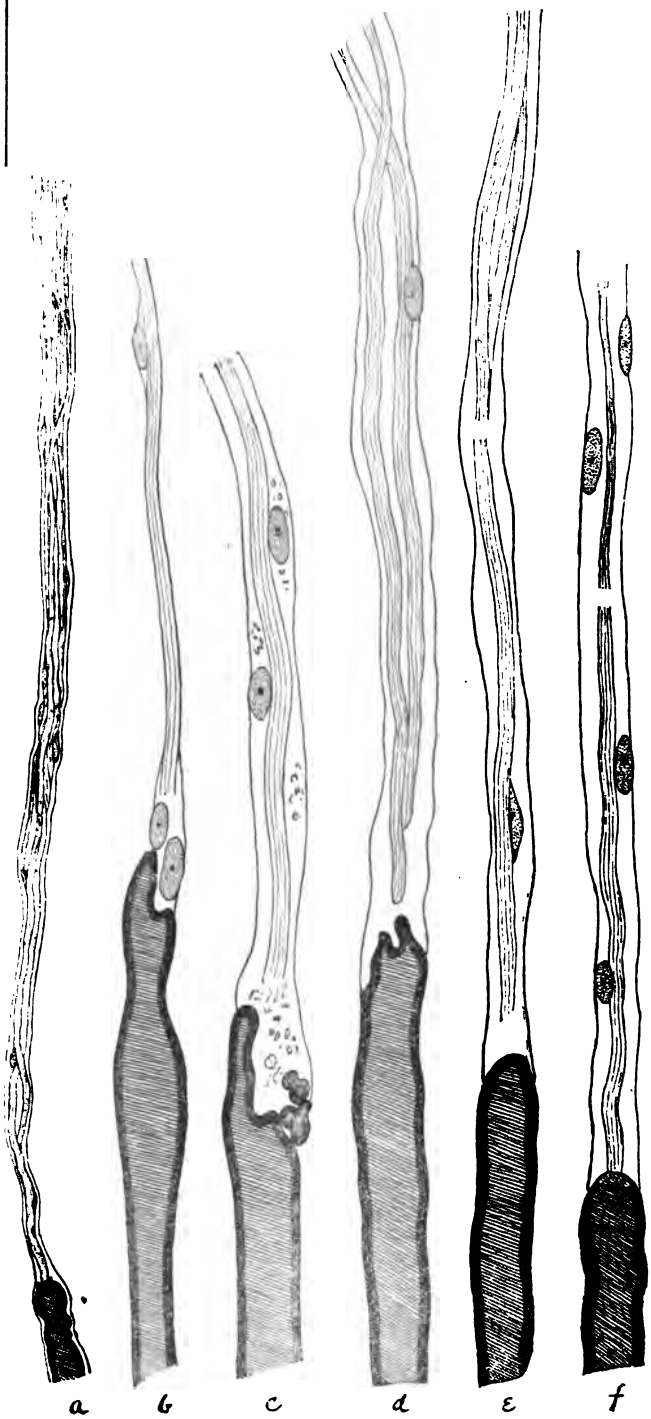

Fig. 4.—Process of Regeneration. (After Neumann.) *a*, Outgrowth of new nerve-fibre from central end, division into numerous axis cylinders (Ranvier); *b*, development of axis-cylinder in peripheral end, the new fibre separated from the old by nuclei; *c*, ditto, with increase of protoplasm destined to become a new myelin sheath, overlapping of old myelin upon the new; *d*, two new fibres developing in a peripheral segment and ready to unite with the central end; *e*, two segments nearly developed, the central one in advance of the peripheral one; *f*, final union of the peripheral with the central segment, nuclei still remaining.

[1] See, also, Weissenstein, Brun's Klin. Chirurg., 1884, p. 310.
[2] L. c., ii., 42–67.

membered that they describe, as the terminal result of the process of degeneration, a band of fibres each consisting of a sheath of Schwann containing a granular mass. The process of regeneration begins in this mass. Within it they have seen a narrow band of fine homogeneous substance appear, which has the structure of a rudimentary axis-cylinder (Fig. 3, *b*). This does not fill the sheath of Schwann, and is often pressed aside by the nuclei which lie in that sheath (Fig. 4, *c*). It is not at first continuous with the end of the old axis-cylinder, remaining in the central part of the compressed or divided nerve, but as it increases in definite structure it approaches this old axis-cylinder, and finally unites with it. At the point of union a ring of Ranvier is formed. As this axis-cylinder develops, a substance is gradually formed around it, which is stained by osmic acid. This increases in thickness as the protoplasmic mass and the nuclei diminish, until it finally forms a new myelin sheath. The new myelin sheath is never continuous with the old one in the central end of the nerve, since it is separated from that by the ring of Ranvier; but often at first the older sheath seems to bulge out and encircle the new sheath, though this appearance is never permanent (Fig. 4, *c*). At the point of union of the new fibre with the old one, nuclei are often found; but these, like the others, gradually disappear (Fig. 4, *b* and *d*). Lastly, a new sheath of Schwann is produced around the new myelin sheath, and within the old sheath of Schwann. It presses aside the old sheath, together with such masses of protoplasm, drops of myelin, and nuclei as may remain, leaving them thus wholly outside of the new-made fibre, so that they coalesce with, and make part of, the endoneurium (Fig. 4, *e*). The new sheath of Schwann has but one nucleus in each segment, and presents the nodes of Ranvier at regular intervals.

Neumann has shown that this process goes on in every individual segment of the nerve-sheath, so that in segment by segment, proceeding toward the periphery, the regenerative change occurs, and as each segment approaches completion it joins itself to the preceding one (Fig. 4, *e* and *f*), until finally the entire nerve is re-established in its entire length. As the degenerative process begins in the segment nearest to the point of compression, so does the process of regeneration; and in some nerves the two processes may be seen going on together, the segments near the seat of injury being renewed while those at the periphery are still in a state of degeneration. The new fibres do not grow out from the old ones, as Ranvier describes in the regeneration of cut fibres, but protoplasm, with specific developmental properties, forms and differentiates the elements of the new fibre, and then unites it to the old one. The new fibres are, at first, somewhat smaller in calibre than the old ones (Fig. 4, *f*), but they gradually attain a normal size, and then the process may be said to be completed.

While Neumann would have the new fibres develop from the granular mass remaining in the old sheath of Schwann, Günther, Hjelt, and Weir Mitchell suppose that they may originate from the nuclei of the old sheath, or even from connective-tissue cells and neurilemma nuclei remaining in the connective-tissue strand, and to this opinion Wolberg agrees. It is evident, therefore, that the process of regeneration is by no means accurately determined. But here again it is possible that conflicting statements may be explained. The method of regeneration may, perhaps, depend upon the exact stage of degeneration reached before it begins. If the product of degeneration is a simple band of connective tissue, it seems probable that the nerve-fibre will have to grow into it from a central origin, as in its original development in fetal life, unless the connective-tissue cells recently discovered are neuro-plastic cells, and have the power of producing new nerves, just as cells of periosteum may produce a new bone. If, however, when degeneration ceases, there remains a sheath of Schwann containing a granular protoplasmic mass, it is not at all improbable that that mass may be differentiated into an axis-cylinder and a medullary sheath, and joined to the old nerve-fibre, a process which has its analogy in the medullation of nerves in the embryonal state. If we admit, with Wolberg, that in some cases the axis-cylinder is not destroyed, the formation of new myelin is a rapid matter. That some such process as the one last described must occur in certain cases is certain, when the rapid recovery after minor injuries is considered, and when the results of nerve suture are taken into account; for in both these conditions the return of function occurs long before a new nerve-fibre, starting out from the old one, could have reached the periphery.

It is affirmed by Mayer that individual nerve-fibres in normal nerves are constantly undergoing these processes of degeneration and regeneration, either because the necessary renewal of worn-out tissue takes place in this manner, or because slight injuries from pressure or over-strain are sufficient to start up degeneration in single fibres.

The process of degeneration in the nerves, consequent upon the destruction of the ganglion cells from which they arise (the so-called Wallerian degeneration) differs in no respect from that ensuing upon compression or division, excepting that in the latter case only the distal part of the divided nerve undergoes the pathological change, while in the former it is the entire nerve that is affected. And in the changes described in multiple neuritis the same progress of events and the same varieties of termination are observed.

When the cases of multiple neuritis are examined from a pathological standpoint several varieties may be distinguished. In some of the cases, and these are the most numerous, there is a parenchymatous inflammation in the nerve-fibre only visible to the microscope. At the outset of this inflammation the myelin sheath appears slightly swollen, is less homogeneous, and, from a difference of refractive power, is less translucent. It then becomes split up into segments of different length and form, the segmentation occurring preferably at the incisures of Schmitt, while the incisures at other parts disappear. Between these segments of myelin, a finely granular protoplasm is seen, in which new nuclei are found. These nuclei probably are the cells of Rosenheim which have emigrated, although a few near the nucleus of the sheath of Schwann may be due to its division. In some fibres the axis cylinder may still be preserved. In others it is broken at the same places as the myelin. At the next stage of the process the changes are more marked. The myelin is now reduced to a series of small globules surrounded everywhere by granular protoplasm, and in this protoplasm the nuclei are now very numerous. The axis cylinder cannot be distinguished in the mass, as a rule, but occasionally a fine line is seen passing through the mass, which may be a remaining cylinder. The succeeding stage presents a different picture. While up to this time the size of the nerve-fibre has remained about normal and uniform, it is now seen to vary. At places the fibre is still wide and filled with a granular mass, at other places it is narrow, the mass having disappeared, leaving either a collapsed sheath or a sheath containing only nuclei here and there. In a few such narrow fibres there seems to be an axis cylinder lying directly within the sheath of Schwann, and occasionally separated from it at various places by nuclei. But this appearance is rarely seen. As a rule, no trace of the axis cylinder remains. As any single fibre may show at some places constrictions, at others dilatations, the variation in its calibre is the most striking feature of this stage. In the terminal stage the calibre is uniform again, but is now everywhere reduced. The sheath of Schwann is empty, or contains only a little granular substance, and the nuclei are now less numerous than before. There is in fact only an atrophied tube with none of its original contents. These tubes lying side by side are folded and undulating, and appear like a strand of connective tissue.

These various stages of parenchymatous inflammation are to be seen in different fibres in the same specimen. Their appearance is identical with that observed in the course of degeneration of a nerve after compression, or after destruction of the spinal ganglion-cells. This has led such an accurate observer as Erb to advance the hypothesis that some slight changes in trophic cells in the spinal cord, not visible to the microscope, are, present primarily, and that these changes are of a secondary nature.[1] But this cannot be admitted. Those who would explain the parenchymatous neuritis as secondary to changes in the cord, fail to explain why it should be limited, as it is, to the distal portions of the nerves, and not be continuous through the nerve-trunks, and anterior nerve-roots into the anterior cells. They also offer no explanation for the cases in which the sensory, as well as the motor, nerves are affected, centrifugal degeneration of these nerves from spinal lesion being unknown. Strumpell, in meeting Erb's hypothesis, urges with reason that a parenchymatous neuritis has its parallel in other parenchymatous inflammations, and therefore does not need to be traced to any primary affection in trophic cells. He also mentions the existence of primary lateral sclerosis of the cord, similar in all respects to secondary degeneration of the pyramidal columns—yet now admitted to be a primary disease—as illustration of the fact that like changes are not always to be traced to one cause. It cannot but be admitted, therefore, that the first class of cases of neuritis must be considered as due to a primary parenchymatous inflammation in the nerve-fibres. This form seems to be much more frequent in its occurrence than the first variety, and constitutes the lesion in the majority of the cases hitherto reported. The appearance in section is seen in Fig. 5, *b*. The appearances of single fibres are the same as those shown in Figs. 2 and 3.

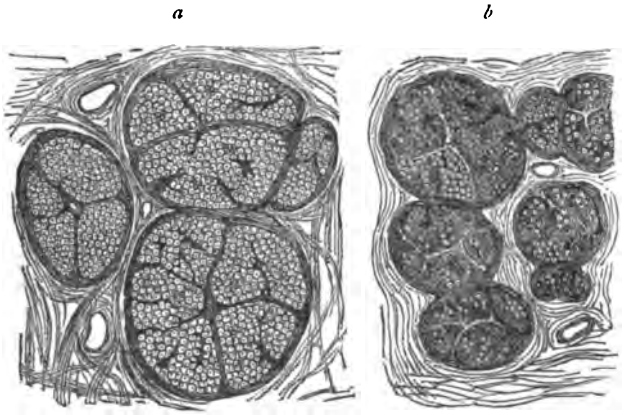

FIG. 5.—(After Joffroy.) *a*, Section through normal nerve; *b*, section through degenerated nerve in a case of multiple neuritis, bundles reduced in size, individual fibres degenerating, their place taken by débris.

A second class of cases presents a different appearance. In this class the mere inspection shows the nerve to have been the seat of pathological changes, for it is either congested, swollen, and lacking in lustre, or it is yellow and irregularly swelled by the accumulation of fat, or it is evidently reduced to a mere connective-tissue strand. Upon teasing the nerve it is at once clear, from its brittleness, that individual fibres are lacking in continuity and are changed in structure. And if it is examined under the microscope the exudation of serum and of lymphoid bodies, the great increase in the number of connective-tissue nuclei, the distended condition of the vessels, as well as the various appearances characteristic of nerve degeneration, are clearly seen. Here the inflammation is either originally an interstitial inflammation or, more probably, a diffuse one. It is possible that the degenerative processes in the nerves may have been due to the compression by the exuded products of inflammation within the nerve-sheath. In one or two cases where the patient died early in the disease, the nerve-fibres which lay near the vessels were affected to a greater degree than those lying deeper, and from this fact it was concluded that their degeneration was secondary. In other cases, however, all the fibres in a bundle are equally involved. Here it is probable that the inflammation was diffuse from the outset, parenchyma and interstitial tissue being affected simultaneously. The final result in either case is a diffuse inflammation. One marked feature in these cases is the large amount of fatty deposit found in the altered nerves. This is to be ascribed to the fact that myelin in undergoing degeneration breaks down into globules and undergoes a fatty change. It is itself allied to fat, and making up, as it does, a large part of the bulk of the fibre, it would be noticeable in the product of degeneration if it were not absorbed. In this form the absorption seems to be interfered with by the vascular condition, and hence the residual amount of fat is increased. The changes observed in the nerve-fibres are very similar to those seen in the first form of neuritis, and need not be described again.

It is to be noted that in both of these forms the pathological changes are always more intense in, and are occasionally limited to, the peripheral terminations of the nerves. The nerve-trunks may be slightly involved in their distal portions, but it is very rare to find any changes in them at their origin from the plexuses. And, as a rule, the spinal nerve-roots in cases of multiple neuritis are normal. In making autopsies upon such cases this fact is to be remembered, and the nerves are to be removed down to their finer branches in the muscles and fascia.

One additional pathological form must be mentioned, since it has been described by such a careful observer as Gombault.[1] It is the so-called segmental periaxillary neuritis. In toxic neuritis from lead-poisoning, Gombault found that the degenerative process was not uniform in the entire length of a nerve-fibre. On the contrary, entirely normal segments alternated with the degenerated segments in the nerve. Mayer has noticed a somewhat similar condition (Fig. 3, *e*). The changes already described take place in the myelin sheath of the affected segment, even to its entire absorption, leaving the axis cylinder in the sheath of Schwann. But as the adjacent segments are not involved, regeneration is thought to be more easily accomplished. Pitres and Vaillard[2] have noticed a somewhat similar condition in the neuritis occurring after diphtheria, although in their case the axis cylinder as well as the myelin sheath was totally destroyed in many segments.

While it is, of course, impossible to describe definitely the process which goes on to complete regeneration of nerves in multiple neuritis, there is no reason to suppose that it differs in any way from that observed in experimental lesions.

The time required for the completion of the process will depend upon the severity and extent of the degeneration. When that is slight the recovery may be rapid, cases having been reported where a total cure took place in two months. As a rule, however, it is a slow process. The large majority of the cases on record required over six months for the complete regeneration, and in not a few cases from ten to sixteen months elapsed before the condition of the nerves was proved to be normal by the total disappearance of all symptoms.

A degeneration of the muscles proceeds hand in hand with that of the nerves. This is usually in the form of an atrophy, with fatty degeneration and an increase of nuclei. The muscle-fibres become thin, homogeneous, are easily split up, contain fatty granules, and finally, in place of the atrophic muscle, new connective tissue is found. When no regeneration takes place, a mass of connective tissue replaces the muscle, containing a few muscular elements.

With the end of 1883 we may consider the third stage

[1] Erb: Neurol. Centralbl., 1883, p. 481.

[1] Gombault: Archives de Phys., 1873, p. 592; also Arch. de Neurol., i., 1.
[2] Pitres et Vaillard: De la Névrite segmentaire, Arch. de Neurol., xi., 337.

of pathological discovery in the history of multiple neuritis as terminating. At that date the symptoms of the disease had been recognized as constituting a distinct clinical picture; hypothetical lesions in the spinal cord had been abandoned, and the exact pathology of the disease had been ascertained. Since 1883 the final period in the development of knowledge of the affection has been in progress. About one hundred cases, of varying degrees of severity, have been observed (see Bibliography). The lesions described have been confirmed in all their details. The symptoms arising in the course of the disease have been subjected to careful analysis, together with their varied modes of combination. Certain diseases hitherto considered of spinal origin are found to be due to peripheral disease. Thus it has been discovered that a form of ataxia may occur from multiple neuritis of alcoholic or arsenical poisoning, which closely resembles and was formerly confounded with tabes; also, that some cases supposed to be anterior poliomyelitis must now be differently named. And as physicians review their records, they find that former diagnoses require revision in the light of new discoveries, and that greater circumspection is to be exercised in differentiating spinal from peripheral affections. The grounds for such differential diagnosis will require attention in the next lecture.

And, what is perhaps of greater importance, the fact has been elicited that some combinations of symptoms formerly supposed to be without a pathological basis, some of the so-called peripheral neuroses, really belong to this class of diseases. At present we have only time to allude to one or two forms of peripheral neuroses which must be removed from that unsatisfactory category of disease and be considered as peripheral neuritis.

And the first of these is the affection termed numb-fingers. This was first described by J. J. Putnam, of Boston, but met with instant recognition from neurologists and from general practitioners all over the world. It is a disease chiefly seen in women between the ages of forty and sixty, usually associated with dyspeptic or uterine symptoms, but entirely independent of them. It begins as a tingling sensation in the ends of the fingers, felt at night, and sufficiently annoying to keep the patient awake. It then extends to the entire fingers, and may invade the hand, and is felt by day as well as by night. The fingers are so numb that all finer acts become impossible; the patient can no longer sew or knit, cannot be sure of holding anything securely, and finds herself unable to perform any delicate movement. Sometimes a slight degree of anæsthesia and analgesia can be discovered by ordinary tests, but often the disturbance of sensation is purely subjective. There is rarely any inco-ordination, and paresis is usually wanting. It may develop in the feet as well as in the hands, making walking more or less disagreeable, and adding to the discomfort of the patient. The affection is of indefinite duration; often subsiding quickly under treatment, sometimes baffling all attempts to arrest it. For a time it was considered a purely functional affection, then a spinal-cord disease;[1] but now, in the light of the parallelism between the symptoms mentioned and those which are characteristic of multiple neuritis, we cannot but consider it a slight form of this disease.

The second of the peripheral neuroses which must be referred to peripheral neuritis is intermittent paralysis. Cases of sudden paraplegia, lasting a few hours and passing off as rapidly as it appeared, have been observed too frequently to admit of any doubt. Westphal has described such a case in which no cause could be found. Gibney reported some cases presumably due to malaria. Others have thought the disease of functional character, either central or peripheral. But in the light of recent observations upon infectious cases of multiple neuritis it becomes evident that these sudden, transient paraplegiæ find their adequate explanation in such an affection.

And, lastly, there are numerous cases of indefinite nervous symptoms, pain of various kinds, formication, and odd sensations grouped under the indefinite term numbness, flashes of cold and heat accompanied by actual changes in the temperature of the part, or only by apparent vascular irregularities, slight spasms, or tremors; functional weakness, with sense of fatigue not reaching the grade of paresis, and many equally obscure manifestations of disturbed function in various parts of the body, which receive their best explanation in the theory of multiple neuritis.[1]

And since it was one of the objects of the founder of this lectureship to determine the true nature of such peripheral neuroses, it is with the greater interest that we examine the disease to which they must be assigned.

In the present stage of progress in the history of neuritis much attention is being given to the etiology of the disease. Cases which, from their causation, were formerly separated are now found to be closely allied in their pathology. Thus the forms of paralysis occurring after the ingestion of various poisons, such as arsenic, lead, bisulphide of carbon, and alcohol, are known to be due to a common pathological change. The various kinds of sensory and motor disturbance occurring as complications of the acute diseases, diphtheria, variola, typhoid and typhus fevers, and severe malarial fever, are traced to a lesion in the peripheral nerves. Tuberculosis is known to predispose to neuritis, and many cases formerly supposed, without question, to be produced by central or meningeal affections of a tubercular character are now assigned to a peripheral cause. It is a question whether syphilis will cause a simple degenerative neuritis, but syphilitic affections of the nerves are easily recognized and well known. Nor can the nervous system escape the action of those micro-organisms which are now recognized as the constant cause of many diseases. There is an epidemic form of multiple neuritis, fortunately not prevalent in this country, but occasionally imported here in the form of sporadic cases, known as kakke, or beri-beri, the bacillus of which has recently been discovered and cultivated. And, lastly, there is a class of cases, of supposed spontaneous origin, in which cold or overexertion are assigned as causes, but which need further investigation in regard to their etiology.

It is evident from this array of causes that several conditions formerly separated from one another because of the different circumstances of their occurrence are really forms of the same disease. But while they may be brought together upon a pathological basis, and while all have many symptoms in common, each of the forms of neuritis presents certain distinct features. Without dwelling too long upon any single variety, it will be necessary to review the different classes of cases in order to obtain a clinical picture of each. And such a review, together with the analysis of the symptoms of multiple neuritis, the discussion of its diagnosis from other diseases, its prognosis, and the treatment, will occupy us at the next lecture.

HEAT HOLIDAYS.—In Switzerland and some parts of Germany the law provides that all schools, public or private, must give the scholars a holiday whenever the temperature reaches a certain height. The regulations in Basle are that when the temperature reaches 77° F. in the shade by 10 A.M. the school must be closed until the late afternoon. These heat holidays are very popular among the scholars.

CONVULSIONS may be frequently cut short like magic by turning the patient on his left side. Nausea, after ether or chloroform, may generally be controlled in the same manner.—*Ex.*

[1] Ormerod, St. Bart. Hosp. Rep., 1883; Sandby, Lancet, 1884; W. Sinkler. Phil. Med. Times, 1884.

[1] Dana, Acroneuroses, N. Y. Med. Rec., July, 1885.

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A LAYMAN'S VIEW OF THE WAY TO PRACTISE MEDICINE.

IT is a fundamental part of the physician's duty that he do the very best he can for every patient. Whoever fails in this is very certain not to succeed long in his profession. It is not a common complaint, therefore, that physicians are thoughtless and unreasonable in their requirements, or prescribe conditions unnecessarily rigorous. That such things do happen sometimes, however, is the opinion of an esteemed correspondent, who has evidently suffered long from medical arts and the divagation of physiological processes. He writes us: "Many physicians, from lack of consideration, worry their patients uselessly. . . . There is, I find, a tendency on the part of physicians to set their patients many ingeniously devised supplementary tasks without fairly considering whether the chances of resultant benefit may not be overbalanced by the distress which is certain to be caused. I speak from many experiences, of which I will cite one, by way of illustration. A physician, who had me on a course of medicine, and some other treatment, prescribed, in addition, a snuff, *to be used every hour.* It soon became apparent that if I went about my usual vocation the hours would often pass away and the snuff be altogether forgotten, or I would be so situated that I could not use it. I therefore found it necessary for several months—as long as the treatment lasted—to lay aside all business and recreations, and to sit idly at home, in sight of a clock, except that I went out occasionally for an hour's walk, or to see my kind physician. The depression and distress caused by this imprisonment were great. If the snuff did me any good I am not aware of it."

We may be permitted to interpose here the remark, that if our correspondent was not able to take a dose of medicine hourly, without giving up his business, and sitting down before his clock, his trouble must have been largely mental, and of the character known as enfeeblement. However, he has other things to say.

"During the last ten years I have, at intervals, been successively (not successfully) treated by a number of well-known New York physicians, seldom for less than six months at a time. Each of these physicians expressed his positive belief that he could restore me to health. No one of them produced on me the least particle of good effect. I was treated by dieting, baths of different kinds, massage, electricity, and counter-irritation, and was given bromides of potassium and strontium, pepsin, quinine, cod-liver oil, mercury, nux vomica, and many other poisons whose names I never knew, or have forgotten. Last July I came under the treatment of a physician who informed me (although these little matters had escaped the attention of my previous physicians) that my urethra was strictured; that I should be circumcised, and that certain malformations in my nasal cavities should be removed by a series of minor operations.

"He first enlarged my meatus. It healed smaller than the calibre of the urethra. Disregarding this fact, he attempted to remove the stricture by dilatation, producing no apparent effect except to tear the orifice several times, leaving it finally in irregular shape. He then cut the stricture; but his cut was a little too short. Two weeks later he gave me a cut overlapping the first one. When I was able to walk about, he gave the meatus a second cut. Next he circumcised me. My wounds are now so far healed as to make it apparent that the circumcision will require a supplementary operation, and that the orifice of the meatus, although large enough, is crooked. It is purposed to overcome this latter difficulty by cauterizing the crooked part, so that it will become sore and heal solid, and then to make a straight cut. Meanwhile the operations in the nasal cavities are under way. I could, while undergoing these operations, have gone about much as usual, had they been undertaken in the summer. *Now* they confine me pretty closely to a warm room.

"Were it not that every physician with whom I have done business has loaded his system of treatment with uselessly onerous requirements, I should feel surprised to find that my present physician—a member of the County Medical Society, and admittedly a master of both major and minor surgery—has not, apparently, even thought it worth while to consider, intelligently, whether one order of arrangement for a series of operations is better than another, but has been content to take them just as they occurred to him, without any seeming order of fitness; and that he has performed each of my three genito-urinary operations in such way that, after healing, it has received, or must receive, another cut.

"It seems as if physicians, especially those of them who practise surgery, might worthily, and even profitably, study how to avoid imposing upon their patients unnecessary burdens. I believe that my operations might have been performed in half the time, with half the pain, with half the blood, with half the trouble, and might have been completed weeks ago. Whenever I have begged my physician for a little more expedition, a little more attention to system, a little more care, he has replied that he will submit to no dictation, and calls me 'A nervous kicker.'"

Our correspondent expresses himself with feeling, and has, we fear, some ground for complaint. Without disregarding the probability of there being another side to his story, we can quite admit the justice of his plea for more consideration in the arrangements and details of a long-continued course of medical or surgical treatment.

THE USES OF ICHTHYOL IN THERAPEUTICS.

Some curiosity has been felt by physicians to know whether the remedy known as ichthyol, or sulpho-ichthyolate of soda, has any special merits, or deserves to be treated as one of the numerous proprietary drugs forced upon the market by enterprising manufacturers. It seems but fair to judge this substance upon its merits, since it was introduced by a man of unquestioned prominence and skill in dermatological science—Professor Unna—and received at his hands an apparently careful physiological study. Accounts of Unna's researches are given in the *Journal of Cutaneous and Venereal Diseases* of September, 1886. Lorenz contributed some results of his experience in the *Deutsche Medicin. Wochensch.* in 1885. Stelwagon and Piffard have written briefly upon it (*Journal of Cutaneous and Venereal Diseases*, November, 1886). So also has Dr. Gécé (*Gazette des Hôpitaux Quarterly Compendium of Medical Science*, October, 1886, p. 447). Some very successful experiences have been reported from its use in the Charité Hospital at Berlin (*Medical and Surgical Reporter*, January 8, 1887), and Dr. Joseph Zeisler writes upon it at length in the *Chicago Medical Journal* of December, 1886. Dr. Dubelir has also given the results of his use of it in several cases of rheumatism (*Rueskaya Meditsina*, August 10, 1886).

Lorenz speaks in high terms of its value in articular rheumatism, when applied externally over the affected joints. Dubelir treated eight cases with it, six being of acute and two of chronic rheumatism. He used the drug both externally and internally, and found that it relieved the pain, but not the swelling. He recommends it, therefore, only as an anodyne. Ichthyol was also given for rheumatism of all types at Charité.

In skin diseases Dr. Stelwagon found that, in a small proportion of cases of acne rosacea and acne vulgaris, the ten or twenty per cent. solution was of value. In furunculus it acted well in three cases when applied as a twenty per cent. plaster. In a fourth case it had no effect. It was of use in psoriasis, and also in a case of lupus erythematosus. In favus it did no good. In twelve cases of eczema he found positively no beneficial effect—certainly a very damaging statement. On the other hand, Zeisler, in 56 cases of eczema, found that the drug produced excellent effects in 11 cases, good effects in 27, fair in 4, negative in 1, and unknown in 13. Dr. Zeisler says, however, that he used the ichthyol combined with zinc ointment as a base, the strength being from five to thirty per cent. This seriously vitiates the value of his conclusions as to its special potency. In 11 bad cases of sycosis, epilation was practised; ichthyol soap and ten per cent. ichthyol ointment was used. The effects were excellent in 4, good in 7, cases. In acne vulgaris good results were only attained by its internal use. In acne rosacea the action was "remarkable" in two cases, and very satisfactory in five. Two chronic and very obstinate cases are reported by Dr. Zeisler, in which a ten per cent. ichthyol salve, sulphur-naphthol soap, and occasional mechanical treatment were resorted to. Dr. Zeisler seems to think that the drug has some effect in chronic rheumatism and dyspepsia.

Ichthyol mixes with all of the ointment bases, and may be made up with vaseline, cold-cream, zinc ointment, etc. It is also used in watery solution, and as a paste, or a soap. It is given internally in capsules of one to two grains, of which from three to ten may be taken daily. It does not disturb the stomach. It has a strong, peculiar odor, and leaves a brownish discoloration of the skin, which soon disappears. Unna believes that it is a strong reducing agent, drawing oxygen from the tissues. It is spoken of as having a regenerative effect in small, and a resolving action in larger, doses; it causes the blood-vessels to contract, and so possesses an astringent property.

It will be seen that the indications for the use of ichthyol are still somewhat indefinite. But while it apparently possesses no wonderful specific properties in any direction, it may be found to be worthy of a place in therapeutics.

THE MEDICAL SOCIETY OF THE STATE OF NEW YORK.

The attendance at the State Society was fully up to the average, and, scientifically speaking, the meeting was a reasonable success. The papers were numerous and good. Many gentlemen on account of the stress of business were unable to obtain any hearing and were forced to read only by title. Much dissatisfaction was caused thereby, although perhaps the error, from a Society stand-point, was on the right side. In another place we present a full report of the proceedings, which speaks for itself.

This year the presidency belonged to New York City. The choice of Dr. A. L. Loomis was an eminently proper one, and will meet with that approval which is the reward for long and faithful labors as an instructive teacher, a lucid writer, and a successful practitioner.

THE REGULATION OF PROSTITUTION IN GREECE.

Our French contemporary, *Le Médecin Moniteur de l'Hygiène Publique*, is learned in classical medicine, and particularly in that part which relates to the cult of Venus and Priapus. In a recent issue the "monitor of public hygiene" discourses in an interesting way upon the laws of prostitution in ancient Greece. These laws, as will appear, convey a valuable lesson, for they show one way of dealing with this question which is sure to fail, because it allows license to the man and slavery to the woman, taking account of the passions only, but not of the health. The laws enacted by Solon established a class of prostitutes. These women had no rights as citizens, could not have legal offspring, were obliged to wear a certain costume, could not enter the temples, and, in fine, had no civil, social, or religious rights. The married woman, on the other hand, was destined to be a mother and to rear children. Her place was the home; she was not allowed at the theatre or public places; she was illiterate, ignorant, and had few accomplishments. To further protect her, or prevent her from indulging in intrigues, there were certain officials, called "gynèco-cosmoi," charged with spying upon her conduct. Severe punishments might be inflicted in case of adultery. The man, on the other hand, was free. "We have our courtesans," said Demosthenes, "for pleasure, our concubines (domestics) for the care of our person, our wives to give us children and rule with fidelity over our homes." This

was a very pleasant arrangement for the man, but was open to the objection from a hygienic stand-point that the man who took his pleasure with the courtesans might bring to his home physical troubles which would interfere with his domestic felicities and the propagation of healthy children. The Greek method of dealing with prostitution protected the home for a time and preserved a class of pure women in a most dissolute age. But the wife in time tired of servitude, and infidelity became common, while the courtesan took away from her more and more of her exclusive privileges. The result finally is pictured in the dialogues of Lucian and the letters of Alciphron.

THE MIDDLETON GOLDSMITH LECTURES.

IT is with great gratification that we present to our readers the first of the Middleton Goldsmith lectures, delivered before the New York Pathological Society. In the movement thus auspiciously inaugurated we recognize a substantial encouragement for progressive work, and a becoming stimulus for patient original research. The New York Pathological Society is the foremost organization of its kind in the world. Its noble record is its best claim for such an honorable position. It is fortunate that its old friends have not forgotten it. Dr. Middleton Goldsmith, now of Rutland, Vt., has, with a few others, been spared to watch its success from the beginning of its existence. In fact, as one of its founders, he has noted its steady progress from a handful of earnest men to a membership of hundreds, absorbing, appropriating, and utilizing the pathological studies of every dead-house of a great city. With a liberality worthy of all praise, and under the advice of a fellow-founder and life-long friend, Dr. John C. Peters, he has endowed a lectureship which shall justly and appropriately bear his name for all time. May he be spared yet many a year to realize to still fuller fruition his cherished wishes.

News of the Week.

HOMŒOPATHY AND HYPODERMICS.—The dean of a homœopathic medical college in this city is reported to have bought another hypodermic syringe recently. This is not what Hahnemann taught; it is not homœopathic.

THE CAUSE OF RIGHT-HANDEDNESS, according to Dr. Oscar H. Allis, is the liver. This throws an extra weight upon the right side, and makes the right the more reliable limb. The use of the right arm, situated directly over the right leg, tends less to the disturbance of the centre of gravity than does the use of the left arm. But how will the doctor explain left-handedness?

BOLDO-GLUCINE is the name of another new hypnotic, obtained from boldo by Dr. René Juranville. It has a quieting effect in nervous insomnia, given in doses of twenty grains to two drachms.

REFORMS NEEDED IN THE NAVAL MEDICAL SERVICE.—In his last annual report Surgeon-General Gunnel recommends an appropriation for the establishment of a naval hospital at Widow's Island, to receive patients from infected vessels of the North Atlantic squadron. Plans for the construction of the hospital accompany the report. The Surgeon-General states that it is impossible, with the present inducements offered, to find young medical men who are disposed to become medical officers of the navy. He recommends that the medical corps of the navy be put on an equality, both as to rank and pay, with that of the army.

COLORADO AND CONSUMPTION.—The Health Commissioner of Denver, Col., reports that in 1886 there were one hundred and ninety-five deaths from consumption in Denver, Col., of which only five were contracted in that place or State.

THE PASTEUR INSTITUTE.—The subscriptions have at last account reached the sum of $300,000.

DEATH FROM THE ELECTRIC CURRENT.—During the progress of a fire in this city, recently, Superintendent Frederick Simmons, who attempted to cut a wire of the United States Illuminating Company, which caused obstruction to the firemen, was instantly struck dead by the force of the electric current with which it was charged.

AN ANNEX TO BELLEVUE HOSPITAL, for purposes of abdominal surgery, is to be erected. It will be attached to the Fourth or Non-collegiate Division.

THE TRUSTEES OF THE MASSACHUSETTS GENERAL HOSPITAL have decided to build a new ward, to be devoted to abdominal surgery.

THE DANGER OF BEING A PIONEER IN OÖPHORECTOMY.—Dr. Robert Batty, now the pride of Southern medicine, says in describing the history of his first case: "While engaged in nursing assiduously, as I did my first patient, spending ten days at her bedside, without leaving the house for a moment, even for a change of linen—during this time of great suspense and anxiety, in the office of one of my brother practitioners, were held nightly meetings of the profession of the town, receiving reports on the condition of my patient, awaiting her demise with anxious longings in order to institute proceedings in our court and put me before the bar as a criminal."

WORSHIPPERS OF SMALL-POX.—There is nothing, however monstrous or grotesque, that is deemed unfit for worship, says Mr. Saltus in his "Anatomy of Negation." In Benares there is a shrine to small-pox, in Gaya there is one to the police. Perhaps in this city there will soon be one for both.

DR. METCALF ON THE TREATMENT OF SCIATICA.—Dr. Metcalf, of this city, writes to the *Boston Medical and Surgical Journal*, that no prescription for sciatica has ever equalled in efficacy the following: ℞. Tinct. aconit. rad., tinct. colchic. sem., tinct. belladonna, āā 3 j. M. Sig.: Dose, six drops every six hours. He also uses triturate tablets, each containing three drops of the following: Tincture of aconite-root, tincture of seeds of colchicum, tincture of belladonna, tincture of actea racemosa—equal parts by volume. Dose, one every four or eight hours.

MITRAL DISEASE AND ACTIVE WORK.—The late Lord Iddesleigh had a lesion of the mitral valves for forty years, but engaged during all that time in active, intellectual, and political work. Contrary to what used to be taught, this kind of life did his heart no harm, but the lesion remained stationary.

TESTIMONIAL TO DR. N. S. DAVIS.—The attainment of the fiftieth year of his professional career by Dr. Davis was signalized, on January 20th, by a very cordial demonstration on the part of the students of the Chicago Medical College. A study-chair and a book-case were presented to the venerable doctor, with the accompaniment of flowers and graceful oratory. Dr. Davis is now in his seventy-ninth year.

DR. GEORGE S. THAYER, ex-Mayor of Binghamton, died suddenly of apoplexy, recently.

REAFFIRMING THE CONSTITUTIONALITY OF THE LAW COMPELLING THE LICENSING AND REGISTRATION OF PHYSICIANS.—From August to December, 1886, Albert Eastman, a resident of Steuben County, Ind., practised as a physician and surgeon. He had, however, not obtained a license for his privilege, and upon an affidavit being filed against him he was tried, convicted, and fined. The conviction was made under the act of April 11, 1885, which makes it unlawful for anyone to practise without a license. Eastman at the trial made a motion to quash the indictment, on the ground that the law was unconstitutional and void, for the reason that the Legislature had no right to place restriction upon the liberty of a citizen in following any profession or vocation which he chose to. The motion was overruled, and after the conviction Eastman appealed to the Supreme Court, where the decision of the lower court was affirmed. The opinion was very comprehensive in every citation, and was written by Chief-Justice Elliott. It held that the case of admitting physicians to practise was the same as the admitting of lawyers, and that the admittees should be thoroughly proficient in learning and skill, so as to protect the interests of the State. A physician was trusted with care of the health, life, and limbs of the people of the State, and it was in order to protect such that the law of license was enacted.

DOCTORS AND THE DECLARATION OF INDEPENDENCE.—Dr. S. Weir Mitchell contends that he was right in his remark that Dr. Benjamin Rush was the only physician who signed the Declaration of Independence. Josiah Bartlett, Lyman Hall, Oliver Wolcott, and Matthew Thornton all studied and practised medicine somewhat, but none were graduates or titular M.D.'s like Rush.

RESTRAINT AT THE UTICA INSANE ASYLUM.—It is announced in the daily papers that the authorities of the State Lunatic Asylum at Utica have abandoned the use of mechanical restraint. This means, we presume, that the "crib" has gone forever.

PROFESSOR DAVID SWING ON "THE CHRISTIAN SCIENCE OF HEALING."—A few weeks ago, when an apostle of the new mode of medical practice had finished reading an address upon the "Christian Science of Healing," some critic said the term "science" should be omitted from such lectures; some one whispered also the word "Christian;" while near such omissions the word "healing" might well take part in the elimination, and not be left to utter solitude. . . . The "Metaphysical Cure" is destined not wholly to fail, but to become a popular element in medical practice. The public may well reject a large part of its claims, and may then thank its disciples for telling us plainly that we are sick often from weakness of will and want of enthusiasm—not real invalids, but whining hypochondriacs, who should be sawing wood in the basement or digging in the back-yard, instead of lying upon the family lounge or dealing out symptoms to the family doctor. For all such suggestions, and for accompanying proofs, these practitioners merit not the fame of discoverers, but of new and eloquent exhorters to action.

ANOTHER SUCCESSFUL PNEUMOTOMY is reported by Dr. J. Thiriar, of Brussels (*Bullet. de l'Acad. Royale de Méd.*, 1886). The patient suffered from a large pulmonary cavity, due probably to a suppurating interlobar pleurisy. It had opened into a bronchus.

REGULATING PROSTITUTION.—Fournier asked 873 male syphilitics how they had become infected. It was found that 625 got the disease from registered, licensed, and regularly examined prostitutes, 100 from working-women, 24 from domestics, 24 from married women, 46 from clandestine prostitutes. The inquiry showed that the licensed prostitute was the most serious source of infection.

THE FACULTY OF MEDICINE OF PARIS has conferred the Lacaze Prize of 10,000 fr., awarded every four years for the best work on the treatment of fevers, typhoid in particular, to M. Albert Robin, for his "Leçons de Clinique et de Thérapeutique Médicales."

MEDICAL STUDENTS IN THE GERMAN UNIVERSITIES.—The total number of students in the medical faculties of the German universities is about three hundred in excess of what it was last winter session, the largest increase (seventy-six) being at Würzburg. Berlin shows a decrease of eight, and Königsberg a decrease of four.

CHARITY ORGANIZATION.—We are glad to notice, from the reports made at the recent annual meeting, that this society continues to flourish and extend its work. It has done good work in the cause of medical charity, by demonstrating that in the dispensaries examined one-third of the patients can afford to pay, and one-third give a wrong address and are more or less frauds.

THE DANGERS OF A MILK DIET.—That milk is not always a good thing for adults is well known; but it seems that an exclusive milk diet may even bring on dilatation of the stomach, emaciation, and many other distressing symptoms. A patient illustrating this fact was recently shown by M. Debove at the Société Médicale des Hôpitaux. The man had had alcoholic gastritis, and lost thirty-six pounds under a milk diet.

PULSATILLA IN ACUTE ORCHITIS.—Dr. Gerard Smith writes (*British Medical Journal*) in the following enthusiastic strain about pulsatilla: "Having witnessed the striking curative action of pulsatilla in acute orchitis and epididymitis, I should like to persuade others to follow Dr. Brunton's advice, and give this drug in inflammatory states of the testicle, epididymis, and spermatic cord. To have it in our power to subdue promptly the intense suffering of such cases is a great blessing; and the relief is so rapid that it is even unnecessary to employ morphine to subdue the pain, while the swelling and heat subside more rapidly than under any other drug."

A TOO HEALTHY CITY.—St. Paul, Minn., reports for the year 1886 the very extraordinary death-rate of 12 per 1,000

Reports of Societies.

MEDICAL SOCIETY OF THE STATE OF NEW YORK.

Eighty-first Annual Meeting, held in Albany, February 1, 2, and 3, 1887.

TUESDAY, FEBRUARY 1ST—FIRST DAY—MORNING SESSION.

THE Society convened in the Court-room in the City Hall, and was called to order at ten o'clock by the President, DR. WILLIAM S. ELY, of Rochester.

Prayer was offered by REV. W. W. FOSTER, Jr.

THE PRESIDENT then delivered his inaugural address, after which he appointed the following committees:

Business Committee—Drs. F. A. Castle and Laurence Johnson, of New York; and Archibald Dann, of Rochester.

Committee on Credentials—Wm. C. Bailey, Orleans County; James D. Spencer, Jefferson County; and James Macfie, Franklin County.

THE PRESIDENT'S INAUGURAL ADDRESS.

After returning his thanks for the honor of being called upon to preside over the deliberations of this body, with reference to the scientific work, he recommended that the President be given discretionary power, when the amount of scientific material will justify, to arrange for the formation of two or more sections, for which he may appoint a chairman and secretary.

He recommended also that matters pertaining to change in the existing medical laws be referred to the Committee on Legislation, with instruction that it report next year what changes are required in the laws affecting the State and County Medical Societies.

The President also recommended that the laws relating to the formation of Boards of Health be referred to the Committee on Hygiene for report next year as to the expediency of recommending any change in the present law.

Reference was made to deceased members, and the recommendation made that the page in the "Transactions" immediately preceding the obituary sketches be made a page "In Memoriam," upon which the names of deceased members during the year should be inscribed.

INVITED GUESTS.

Drs. E. W. Mulligan and H. S. Beahan, of Monroe County; R. J. Wilding, of Malone; J. E. Janvrin, of New York; Geo. H. Oliver, Dickinson, Franklin County; T. A. Foster, Portland, Me.; J. W. M. Shattuck, D. H. Cook, R. D. Clark, S. R. Morrow, E. A. Bartlett, and Franklin Townsend, of Albany; C. N. Dixon Jones, of Brooklyn; Claude Wilson, of Waterville; J. A. Morris of Hudson; G. P. English, of Booneville; G. A. Menzie, Verona; F. N. Otis, New York; Roswell Park, Buffalo; H. T. Dana, Cortland; Reuben Jeffrey, Jr., Norwich; J. H. Moon, Otsego County; S. S. Wallian, Essex County; A. M. Larkin, St. Lawrence; J. B. Ramsay, Clinton County.

The question of the appointment by the President of

A MEMBER OF THE COMMITTEE ON LEGISLATION

was raised, and on motion it was referred to the Committee on By-Laws for report as to whether, a vacancy occurring, it can be filled by appointment or must be filled by election by the Society.

THE COMMITTEE ON EXPERIMENTAL MEDICINE

reported that no bill conflicting with its interests had been introduced into the Legislature within the last year.

On motion by DR. PIFFARD, of New York, the usual

COMMITTEE ON THE PRESIDENT'S ADDRESS

was appointed, consisting of Drs. Piffard, of New York; Sherman, of St. Lawrence; and J. V. Kendall, of Onondaga County.

Several

PERMANENT MEMBERS

were then elected, in conformity with the resolution adopted last year.

DR. W. C. WEY, of Elmira, read a paper on

SEPARATION BY VIOLENCE OF THE EPIPHYSIS, AT THE HEAD OF THE HUMERUS, IN AN INFANT TWO WEEKS OLD.

He had been able to find record of only a single case, that reported by Hamilton in his work on "Fractures." The case illustrated how promptly, completely, and rapidly recovery takes place when left to nature.

DR. DAVID WEBSTER, of New York, read a paper entitled

ADAPTATION OF CORNING'S METHOD OF PRODUCING LOCAL ANÆSTHESIA TO OPERATIONS ON THE EYELIDS,

consisting of multiple puncture and the introduction of cocaine by the aid of a galvanic battery.

DR. SHERWELL, of Brooklyn, had always liked the instrument, because it was his own invention.

DR. POOLEY, of New York, had used what was more satisfactory to him than Dr. Corning's method, namely, the use of Knapp's entropion forceps, and the hypodermatic use of the cocaine.

DR. CORNING took some exception to the purpose for which Dr. Pooley had said that he applied the forceps-clamp.

DR. POOLEY replied that what he had stated was substantially what he stated in the New York Ophthalmological Society, and that he had not claimed any priority.

DR. J. LEONARD CORNING, of New York, then read a paper on his method of

MEDICATION OF THE NERVES OF THE SPINAL CORD,

which consisted in first introducing cocaine by means of the electro-chemical method or by means of the hypodermic syringe and then covering the area with fine wire gauze and making moderate pressure, which includes the fine capillaries, without pressing out the anæsthetic.

DR. F. W. RING, of New York, testified to the practical efficacy of the method, but urged the following cautions: 1, The positive electrode must be directly over the cocaine; 2, anæsthesia is confined to the area of punctures, and therefore care must be taken not to cut outside of this limit; 3, the possibility of coagulating the vitreous; 4, a fresh solution must be used to avoid irritation.

DR. PHELPS, of Chateaugay, regarded cocaine as one of the most dangerous drugs when handled indiscriminately, and thought that it should be used in as small quantity as possible.

DR. ROOSA, of New York, thought that the dangers from the use of cocaine had been extremely exaggerated.

IS THE DANGER FROM POST-PARTUM HEMORRHAGE INCREASED BY THE USE OF ANÆSTHETICS DURING PARTURITION?

DR. FORDYCE BARKER, of New York, read a paper on the above subject, in which he said that the affirmative answer to this question was one of the most effective arguments urged against the use of anæsthetics in midwifery nearly forty years ago by such eminent obstetricians as Tyler Smith, Robert Barnes, and many others. Even the most recent authors, and many writers in medical journals, refer to the danger of anæsthetics in causing post-partum hemorrhage.

The real question is whether anæsthetics, properly administered, should be withheld from a woman in labor,

when desirable to save her from unnecessary suffering, because of the danger of causing post-partum hemorrhage.

He regards chloroform as the safest and best anæsthetic in obsetrics, and since 1850 he has not used ether.

What is termed uterine inertia is often but another name for uterine exhaustion, and this most certainly must be less likely to occur when the nerve-force and vital powers have been saved by the use of an anæsthetic. This uterine exhaustion may be and often is the result of prolonged labor, and while he was convinced that the effect of chloroform was often to prolong labor, he had not been satisfied that this apparent objection was not more than counterbalanced by the advantage obtained by its use, even where the use of the forceps has been made necessary for that cause. But in a large majority of patients his experience led him to believe that the use of chloroform shortens labor.

Dr. Barker does not hesitate to give chloroform to a woman with heart disease. In his private practice he had never had but one case of post-partum hemorrhage, and in that no anæsthetic was administered.

Dr. T. Addis Emmet, of New York, said that anæsthetics hasten labor, but that in many cases injury was done by their too early use.

Dr. W. W. Hewlett, of Suffolk County, thought that, when improperly used, chloroform might have something to do with favoring the occurrence of post-partum hemorrhage, but properly administered in the second stage it hastens labor, and he was not afraid to use it, and rarely attended a case of labor without it.

Dr. S. B. Ward, of Albany, does not regard chloroform as the safest anæsthetic in labor; but was perhaps prejudiced against it, because of its danger in general surgery. He preferred ether, and believed that the danger from the anæsthetic was much less than the danger from the severe suffering during labor without it.

Dr. McLaury, of New York, spoke in commendation of the use of chloroform. He had used hydrate of chloral with good effect.

Dr. F. A. Castle, of New York, spoke of a case in which the woman had had repeated post-partum hemorrhage, but in her eighth labor, without chloroform, the hemorrhage was so profuse that he should in her next confinement give chloroform at the closing of the second stage to give relief from the pain attending the passage of the head over the perineum.

Dr. J. O. Roe, of Rochester, read a paper on

CORRECTION OF THE DEFORMITY OF PUG-NOSE BY OPERATION,

which consists of removing from the end of the nose a sufficient portion to make it symmetrical from one end to the other. He had performed it in five cases successfully.

SPECIAL REPORT OF THE COMMITTEE ON BY-LAWS,

by Dr. W. C. Wey, of Elmira. The Committee most respectfully reported that, while it was clear that the presiding officer had no authority to fill a vacancy in a standing committee, they recommended that the action of the President in appointing Dr. Bendell a member of the Committee on Legislation be confirmed by the Society, but that it could not be taken as a precedent for similar action in the future.

The Society then adjourned, to meet at 2.30 P.M.

Afternoon Session.

The Society was called to order by The President.

THE REPORT OF THE COMMITTEE ON LEGISLATION

was read by Dr. Bendell, of Albany, which included an approval of the Purrington bill for codifying the medical laws of the State from 1806; also recommending that $100 be appropriated for Mr. Purrington for aid rendered to the Committee.

The report was adopted after discussion by Drs. Lewis, of New York; and Furbeck, of Gloversville.

Dr. Roosa, of New York, offered the following, which was unanimously adopted:

Resolved, That while the Medical Society of the State of New York approves of the report recommending the codifying of the laws of the State of New York as regards medical matters, it does not relinquish its conviction, so often expressed, that it is necessary for the interest of the people and the profession that a law creating a board of medical examiners be passed.

In connection with this subject the Secretary read a communication received from Dr. Martindale, of the Richmond County Medical Society.

Dr. H. G. Piffard, of New York, read the

REPORT OF THE COMMITTEE ON THE PRESIDENT'S ADDRESS,

which approved of recommendations one, three, and four, but regarded the second recommendation as being premature.

Dr. Sidney Ringer, of London, England, sent a paper on

THE INFLUENCE OF SMALL DOSES OF THE SALTS OF SODIUM CALCIUM AND POTASSIUM ON THE HEART AND THE SKELETAL MUSCLES OF THE TORTOISE,

which was read by Dr. E. V. Stoddard, of Rochester.

Dr. O. D. Pomeroy, of New York, read a paper in which he related

CASES EXHIBITING THE RESULTS OF MULTIPLE PARACENTESIS ON THE HEARING IN CHRONIC AURAL CATARRH.

The number of cases was twenty-four; six of which were contributed by Dr. N. J. Hepburn, of New York. There was a decided improvement in the hearing in both ears in *seven* cases; considerable gain in one ear in *three* cases; great improvement after inflation in *one*, but not maintained until puncture. In the other cases the benefit was variable.

The paper was discussed by Dr. Roosa, of New York, who regarded ordinary conversation as the best test of hearing, and he had heard with great satisfaction of one case where ordinary conversation was heard very well where previously it was heard badly. The discussion was continued by Dr. Bendell, of Albany; and Dr. Hepburn, of New York.

The President then announced the following:

COMMITTEE ON NOMINATIONS.

First District—Thomas R. Pooley, of New York.
Second District—A. M. Campbell, of Westchester.
Third District—B. A. Mynderse, of Schenectady.
Fourth District—A. W. Suitor, of Herkimer.
Fifth District—W. E. Ford, of Utica.
Sixth District—Henry C. May, of Corning.
Seventh District—J. V. Kendall, of Baldwinsville.
Eighth District—David Little, of Rochester.

The President appointed as member of this Committee from the Society at large, Dr. Harvey Jewett, of Canandaigua.

Dr. David Little, of Rochester, read a paper entitled,

IS MODERN MIDWIFERY MEDDLESOME?

In normal labor, as recommended to be practised by use of the vaginal douche, treatment of the perineum, etc., the answer was substantially in the affirmative.

Dr. Fordyce Barker, of New York, opened the discussion, and mentioned the fact that he had never had but one case in which it was necessary to suture a lacerated perineum. He recommended several years ago the use of the vaginal antiseptic douche after delivery of the placenta, to be continued three or four days, but for over

four years he has not used them unless there was some special indication.

Dr. L. Johnson, of New York, believed that a great deal of trouble in midwifery practice was due to the indiscriminate use of anæsthetics.

Dr. E. L. Partridge, of New York, spoke of the uselessness of cocaine in labor.

Dr. A. G. Gerster, of New York, spoke of the necessity of absolute cleanliness, especially as to the hands.

Dr. Barker doubted whether physiological cleanliness was the same as physical cleanliness, although he agreed with Dr. Gerster with reference to cleanliness of the hands.

Dr. J. S. Wight, of Brooklyn, reported

A CASE OF DISLOCATION OF THE LEFT FEMUR UNDER THE PUBIC ARCH.

It was first reduced into the thyroid foramen, and then reduced as if originally of that variety of dislocation.

Dr. L. Emmett Holt, of New York, then read a paper entitled

A PLEA FOR MORE CAREFUL INVESTIGATION OF THE URINE IN INFANTS AND YOUNG CHILDREN.

Primary disease of the kidneys in infancy occurs, and may not manifest itself by symptoms other than those exhibited by examination of the urine.

The paper was discussed by Dr. A. B. Simmons, of Utica, Dr. Low, of Oswego, and Dr. Kretschmar, of Brooklyn; and the discussion was closed by Dr. Holt.

Dr. F. N. Otis, of New York, read a paper on

THE TREATMENT OF DEEP URETHRAL STRICTURE,

in which he said that the central point in the paper was the recognition of strictures in the bulbous portion of the urethra *without entering the bladder*, and dividing them with a *miniature* Maisonneuve instrument (other instruments, if necessary), thus avoiding the necessity of external urethrotomy.

The Society then adjourned to meet at 7.45 P.M.

Evening Session.

The Society was called to order at 7.45 by The President.

Dr. Alfred Mercer, of Syracuse, read a paper

CONCERNING STATE PREVENTIVE MEDICINE,

the object being to stimulate an increased interest in sanitary questions through the medical and lay press.

Dr. David Little, of Rochester, exhibited a rubber bag, with tube attached, to be used as

A SUBSTITUTE FOR THE ORDINARY "DINNER-PAD,"

in applying Sayre's plaster-of-Paris jacket.

Dr. H. R. Hopkins, of Buffalo, read a paper on

THE INTOXICANT HABIT,

alcoholic, cocainic, and otherwise. Are we responsible in any degree for its causation? When is it a vice? When is it a symptom? With what diseased conditions is it associated? To what diseased conditions does it tend? What relation has the intoxicant habit to personal responsibility, liberty, and testamentary capacity? The paper was discussed by Dr. W. C. Wey, of Elmira, and Dr. W. E. Ford, of Utica.

Dr. Thomas Addis Emmet, of New York, made some

REMARKS ON INTRA-UTERINE MEDICATION.

He was the first to oppose this method of treatment. The answer to the question turns on the general pathology of uterine disease apart from diseases the result of parturition. Many of the conditions which we treat today as diseases are merely symptoms. Ordinary discharges from the uterus are due to some cause outside of the organ, the discharge being accidental. Leucorrhœa occurs from anæmia, and from local pelvic peritonitis, etc., and, therefore, treatment should be directed toward these pathological changes rather than to the symptoms produced by them.

Dr. Wylie, of New York, argued in favor of intra-uterine medication, believing that there were some conditions which could not be removed by any other mode of treatment. It should never be resorted to so long as there is peri-uterine inflammation.

Dr. A. Vander Veer, of Albany, read a paper on

THE NECESSITY FOR COMPLETE REMOVAL OF THE UTERINE APPENDAGES WHENEVER OPERATION IS CALLED FOR.

The subject was considered under two heads: (1) What proportion of cases of hystero-epilepsy are relieved by removal of the uterine appendages? (2) What condition of the tubes have been observed after simple removal of the ovaries, or Battey's operation?

Dr. S. B. Ward, of Albany, read a paper on the same subject, received from Mr. Lawson Tait, of Birmingham, England, in which he foreshadowed his probable opinion that, where operation is demanded by the presence of serious disease, even if on one side only, total removal of the uterine appendages should be practised.

Dr. T. A. Emmet believed that the operation should *never* be performed for the relief of neuralgia due to anæmia. It is still a question as to how much influence removal of the uterine appendages has upon the growth of uterine fibroids. The operation has a place, but it has been greatly abused; abused more in this country than abroad. Beyond question we owe a great deal to Mr. Tait, but if all the cases of what Dr. Emmet called peri-uterine inflammation were due to diseased ovaries and tubes, the operation had a very limited field, for he believed such patients could be cured by other means.

Dr. W. Gill Wylie, of New York, said that in cases of well marked hystero-epilepsy he would favor the operation, although his experience was by no means perfectly satisfactory. He was not prepared to remove the ovaries which were not diseased. He does not believe in removing the ovaries and tubes simply because they are diseased, but if they give rise to repeated attacks of peritonitis, and the patient is practically bedridden, or has reached an age after which her ovaries will not be of service, he would operate.

INVITED GUESTS.

Dr. Wilcox, from the Berkshire District Medical Association, Massachusetts; Pascal M. Dowd, Oswego; J. O'Dwyer, of New York; May Owen, Richmond County; J. Myers, of Kingston; J. H. Bogart, of Roslyn; S. R. A. Dolley, of Rochester; O. D. Ball, J. Lewi, John Thompson, L. B. Winne, G. L. Munson, P. J. Keegan, Joseph Craig, Thomas Trego, A. E. Larkin, George C. Culver, A. H. Hoadley, Lorenzo Hale, H. E. Mereness, J. H. Van Rensselaer, and Dr. Murphy, of Albany; F. H. Bosworth, of New York, and C. P. Byington, of Croton Landing.

The Society then adjourned to meet at 9 A.M., Wednesday.

Wednesday, February 3d—Second Day—Morning Session.

The Society was called to order by the President, Dr. Ely, of Rochester.

Prayer was offered by Rev. C. H. W. Stocking, D.D.

Dr. Chas. H. Porter, of Albany, Treasurer, presented

THE TREASURER'S REPORT,

which was referred to an Auditing Committee, consisting of Drs. B. F. Sherman, of St. Lawrence County; J. V. Kendall, of Onondaga County; and S. Sherwell, of Kings County.

Dr. W. C. Wey, of Elmira, Chairman of

THE COMMITTEE ON BY-LAWS,

asked that the question of delegateship from the Northern Medical Association be further referred to the Committee for report next year. Granted.

Dr. E. H. Parker, of Poughkeepsie, introduced a resolution concerning

THE RELATION OF COUNTY SOCIETIES TO THIS SOCIETY,

which was referred to the Committee on Legislation for report next year.

Dr. S. B. Ward, of Albany, reported the following as

INVITED GUESTS:

Drs. George Huntington and C. L. Fletcher, of Dutchess County; S. S. Richards, of Frankfort; M. B. Bagley, of Haverstraw; S. A. Russell, H. S. Case, and J. B. Southworth, of Albany; J. W. Poucher, of Gardner.

Dr. E. V. Stoddard, of Rochester, Chairman of

THE COMMITTEE ON HYGIENE,

made the annual report, which was referred to the Committee on Publication.

Dr. A. G. Gerster, of New York, read a communication on

ANTISEPTICS IN PRIVATE PRACTICE AND EMERGENCIES.

Practical demonstration of the same was made by Dr. Gerster at the hospital in the afternoon.

Dr. A. M. Phelps, of Chateaugay, demonstrated his method of

MANAGEMENT OF CERTAIN FORMS OF EQUINO-VARUS.

His view concerning the pathology of club-foot is that the deformity is primarily due to contraction of the soft parts, and secondarily to changes in the bones, which yield to the contraction. The application of a water-glass shoe was an essential feature, adjusted by the assistance of mechanical apparatus for putting the foot into the proper position.

Dr. Lucien Howe, of Buffalo, read a paper on

ANTISEPTICS,

in which he spoke of the tests, the limitations of the term, the methods required to establish the value of such an agent, the method of obtaining a pure culture, microphotographic apparatus, and the effect on the eyes of the rabbit when the culture is sterilized and when not sterilized.

The paper was discussed by Dr. Hailes, of Albany.

Dr. R. F. Weir, of New York, then read a paper on

THE TREATMENT OF REDUCIBLE AND IRREDUCIBLE HERNIA BY HEATON'S METHOD, AND BY THE RADICAL OPERATION OF TYING-OFF BY TUCKING UP THE SAC AND HIGH SUTURING OF THE INGUINAL CANAL.

The details of these methods were described. Heaton's method is applicable only to the small reducible hernias which have a distinct canal, and especially in children where trusses have failed to cure.

The radical operation is applicable to the large hernias, the irreducible hernias, in which the internal and external rings are opposite to each other, etc. According to his experience relapses occur in thirty-nine per cent., and the mortality which he had found in 425 cases was 2.85 per cent.

Dr. Charles D. Jones, of Brooklyn, described

A MODIFICATION OF MACEWEN'S METHOD

of treatment of hernia described by Dr. Weir.

Dr. Roswell Park, of Buffalo, had been so satisfied with Czerny's method that he had not resorted to any other. So far as he knew there had been no relapses.

Dr. A. Vander Veer, of Albany, said that, in the midst of all the operations that have been devised, something more is still required, in view of the success that has been obtained. Cases treated by Heaton's method have given fairly satisfactory results. In cases in which omentum complicates, the proper way to deal with it is, as Dr. Weir has said, to remove it, otherwise trouble will ensue. He uses catgut with considerable reluctance. MacEwen's is a form of one of Wood's methods.

Dr. Wylie, of New York, said that hernia after laparotomy could be prevented by drawing up the strong fascia and suturing the fascia of one side to that of the other; in that way a strong wall can be obtained.

Dr. W. B. De Garmo, of New York, did not believe that Heaton's method was adaptable to all cases, and said that in all old and more serious cases the method which he favored was MacEwen's. He does not approve of sewing the stump of omentum into the ring, as practised by Dr. Park.

Dr. Weir said that if the omentum was adherent it must be separated and dropped loose in the abdominal cavity. When the omentum is removed it should be tied off in small sections and then a single silk ligature placed around the whole.

With reference to his thirty-nine per cent. of relapses, in eighty per cent. of these the hernia was in a tractable condition. The radical operation is applicable to cases of strangulation, and with a less percentage of relapses than occurs in non-strangulated cases.

Dr. Vander Veer, of Albany, said that, in correspondence with

MR. LAWSON TAIT,

the latter had said that he does not remove the uterine appendages in cases of hystero-epilepsy; in second operations he cuts through the old cicatrix; that he has not had hernia following laparotomy.

On motion of Dr. Vander Veer, the Society gave a vote of thanks to Mr. Tait for his contribution.

Dr. Bendell, of Albany, read a paper on

TOBACCO AMBLYOPIA,

believing that its occurrence was more frequent than was generally believed.

Dr. Roosa, of New York, believed that, at this juncture in the general discussion of this subject by the profession, all might admit and believe that there was a large number of cases of amblyopia from the combined influence of alcohol and tobacco, perhaps from the influence of tobacco alone, but he thought that we were not yet permitted to say that its occurrence from the influence of tobacco alone had been proved.

Dr. Alfred L. Loomis, of New York, then read a paper on

PAROXYSMAL CARDIAC DYSPNŒA.

In many cases of cardiac hypertrophy and dilatation dyspnœa is a prominent symptom. It is often of gradual development, and depends rather upon secondary pulmonary and renal changes than upon the cardiac lesion.

In the cases of which he wished to speak, the dyspnœa is due to influences existing within the heart. Its one essential cause is a temporary or permanent arrest of the blood within the heart and pulmonary arteries, which is either paroxysmal or it will speedily terminate in death. He related illustrative and typical cases. The primary cause is gradual failure of organic power of the heart, and the exciting cause is anything which will lead to undue cardiac action. The symptoms consist in the sudden development of dyspnœa, with pale countenance, feeble pulse, intermittent and irregular cardiac action, cold sweat, sense of extreme distress in the chest. Cardiac murmurs are not present; cardiac impulse is feeble; no evidence of valvular insufficiency; urine negative; and entire absence of pulmonary disease. Degeneration and thinning of the cardiac walls has been the most constant lesion; first, and most advanced, in the right ventricle. The essential feature of treatment consisted in regulation of diet, and a careful regulation of

exercise in the open air. Medicinally, alkalies, preparations of iron combined with small doses of digitalis.

The paper was discussed by Dr. Sherman, of Ogdensburg.

THE CLINICAL SIGNIFICANCE OF ENDOCARDIAL MURMURS.

Dr. Wesley M. Carpenter read a paper on the above subject, in which he expressed the belief that the *pathological* significance had overshadowed the *clinical* significance of endocardial murmurs, and therefore the terms "endocardial murmur" and "valvular disease of the heart" had been very frequently used synonymously.

The interest in the paper centred in the following propositions and conclusions:

Propositions: 1. The only definite relation between endocardial murmurs and valvular diseases of the heart is that of determining exactly where the lesion exists. Even this has limitations.

2. Clinical studies and pathological observations have determined that no definite ratio exists between endocardial murmurs and the amount and gravity of valvular disease. A very loud murmur may accompany a very small amount of disease, and, *per contra*, extensive valvular and organic disease of the heart may exist unaccompanied by any cardiac murmur.

3. Endocardial murmurs, when present, enable us, as a rule, to ascertain definitely which auriculo-ventricular opening is involved. They may indicate the amount of damage which the valves have sustained.

Conclusions.—First.—That endocardial murmurs and chronic valvular disease of the heart are not synonymous terms.

Second.—That the existence of a persistent endocardial murmur is not inconsistent with long life and the enjoyment of a fair degree of health.

Third.—That the knowledge, on the part of the patient, of the presence of an endocardial murmur should guard him against exposure to all influences that may give rise to any of the diseases which are liable to have cardiac disease as a sequel, or that will cause increased cardiac action.

The paper was discussed by Dr. Loomis, of New York, who said that, up to the time when evidence of degeneration of the cardiac walls could be obtained, he did not mention the fact of the presence of a cardiac murmur, but when such evidence existed he informed his patient of the exact condition present. A prolongation of life depends largely on the proper management of the case with reference to hygienic measures and general medicinal treatment.

Dr. J. O'Dwyer, of New York, then demonstrated on the cadaver his method of

INTUBATION OF THE LARYNX.

He received a vote of thanks.

The Society then adjourned to meet at 2.30 P.M.

Afternoon Session.

The Society was called to order by the President at 2:45 o'clock.

AMENDMENTS TO THE BY-LAWS.

Dr. W. C. Wey, of Elmira, Chairman of the Committee, reported, recommending that delegates be elected for three instead of four years, and that they be made eligible to permanent membership after *two* years of actual service.

The recommendations were adopted and the By-laws amended to correspond with them.

THE AUDITING COMMITTEE.

Dr. Sherman, Chairman, reported that it had examined the Treasurer's report and the vouchers, and had found them in every respect correct.

The report was accepted and ordered entered upon the minutes.

Dr. E. F. Brush, of Mount Vernon, read a paper on

THE MAMMARY GLAND.

After a humorous introduction, in which he quoted instances of the secretion of milk in the mammary glands of the unimpregnated female as well as in the male, and deplored the fact that the product of human female mammary glands was threatened with competition not only by the baby-food men, but also by the male wet-nurses of the future, Dr. Brush gave his own experience with cases of mammary abscess. He pointed out that, as there is an excessive activity in the gland during the puerperal state, disturbances in the other parts of the economy produce pathological changes in it; that a malarial chill, rheumatic seizure, or the like, were often at the bottom of these troubles, and that by treating these constitutional symptoms the local manifestations could be aborted, and that this, indeed, was the rationale of the exhibition of quinine and salicylic acid in cases of abscess. For sore nipples he proposed a new, and according to his statement, an effectual, method of preventing and remedying this troublesome annoyance; for painful abscesses he recommended ice-bags, and, if necessary, strapping and bandaging, and in galactorrhœa ergot, quinine, and iodide of potassium. For emptying the breast he preferred the use of hot bottles as more efficient and gentle than breast-pumps, many of which he described as simply barbarous. He alluded to the fact that in the human female pus never exudes from the nipple, while in the bovine female it always exudes from the teats.

Dr. George F. Shrady, of New York, Chairman of the Committee, reported on

THE MERRIT H. CASH PRIZE.

The prize was awarded to an essay bearing the title "Physiological Condition and Sanitary Requirements of School Life and School-houses," bearing the motto "*Experte Crede.*"

The name of the successful competitor was Dr. A. N. Bell, of Brooklyn.

The number of essays submitted was eight.

Dr. W. E. Ford, of Utica, read a paper entitled

OBSERVATIONS ON THE REFLEX NERVOUS DISTURBANCES.

Dr. Roswell Park, of Buffalo, read a paper on

SURGERY OF THE LUNGS,

in which he gave an historical sketch, and then spoke of the indications for pneumotomy and its results, pneumectomy, experimental and clinical, and indications for its performance, and thoracoplasty, Estlander's operation and its modifications, and the general principles upon which it is based. He then reported cases which had been under his own observation.

The paper was discussed by Dr. Weir, of New York, who believed that cutting into the lung for acute abscesses did not have a firm footing in surgery; while for certain chronic conditions, such as gangrene, removal of foreign bodies, etc., it was a legitimate procedure, and one that was well established in surgery. With regard to removal of a portion of the chest-walls for the benefit of pleural and pulmonary conditions, successful results were more easily obtained.

Dr. C. C. Rice, of New York, read a paper on

THE RELATION OF LARYNGEAL TO PULMONARY PHTHISIS AND THE IMPORTANCE OF LOCAL TREATMENT,

in which he discussed the question of primary and secondary development of the laryngeal affection, also the question, Is laryngeal phthisis always tubercular? etc. He does not believe that laryngeal phthisis is always laryngeal tuberculosis, and for these cases he bespoke the benefit which comes from local treatment.

The paper was discussed by Dr. F. H. Bosworth, of New York, who substantiated the belief that laryngeal phthisis is frequently non-tubercular and susceptible of cure, and by Dr. O. B. Douglas, of New York, who

spoke of the marked benefit that followed the internal use of terebene in six-drop doses three times a day.

INVITED GUESTS.

Dr. W. E. Ford reported the following: Drs. C. S. Parkhill, of Hornellsville, and R. F. Parkhill, of Howard.

Dr. A. W. Suiter, of Herkimer, read a paper in which he gave

SOME POINTS OF MEDICO-LEGAL INTEREST IN THE SCIENTIFIC INVESTIGATION OF THE CASE OF THE PEOPLE *vs.* ROXALANA DRUSE, TOGETHER WITH AN EXHIBITION OF SPECIMENS REPRESENTING THE CORPUS DELICTI.

The paper was discussed by Dr. W. M. Carpenter, of New York, who referred to the possibility of cremation being made available for removing medico-legal evidence.

Dr. Sherman, of Ogdensburg, wished to thank the author personally for the care with which the case was worked up.

Dr. E. L. Partridge, of New York, read a paper on

INTUBATION OF THE LARYNX,

in which he spoke of the dangers of the operation, the fact that it did not compete with tracheotomy, and he believed that it should be tried carefully and industriously, and that the credit of the method should be given to O'Dwyer, an American investigator.

Dr. A. Jacobi, of New York, said that he felt obliged and was willing and anxious to discard the opinion he entertained two years ago, and which he published in "Pepper's System of Medicine," with reference to intubation of the larynx, and wished to say that if anyone deserved credit for his discovery and his painstaking labor, it certainly was Dr. O'Dwyer. There was no doubt that a large number of children had been relieved immediately, not only temporarily, but permanently.

Dr. Hopkins, of Buffalo, referred to six cases in which impending death was overcome and life saved by intubation.

Dr. Hailes, of Albany, reported two cases in which intubation was practised successfully.

The discussion was continued by Dr. Brush, of Mount Vernon, who gave the operation the name of "intubation."

Dr. A. F. Currier, of New York, read a paper on

THE PALLIATIVE TREATMENT OF CANCER OF THE UTERUS IN ITS LATER STAGES.

He first referred to the origin of the term cancer, and then to the pathology of the disease. He then made some remarks on the question of local and constitutional origin, and also on the question of radical removal. The weight of opinion tends toward the view that it is of local origin, but that it reappears, and that radical cure after its first stages have been passed is impossible. The disease does not seem to be likely to be put on the list of affections due to a bacillus, and there are still too few data to enable one to speak with positiveness concerning the possibility of its originating by inoculation.

As to classification, he follows Waldeyer, and calls all the forms epitheliomata. By later stages he meant the period when constitutional infection has almost certainly occurred, the uterus is fixed, and ulceration exists to a greater or less degree.

If the patient can bear the operation, he advocated the removal of all the tissue which can be so removed with the scissors, then with the curette, and then, after the surface is thoroughly dried, apply the Paquelin cautery at red heat over the entire field of operation. After removal of the slough, the surgical treatment will consist of vaginal irrigations of hot water, and suitable topical applications. Medicinal curative treatment plays an unimportant part. The hygienic and dietetic treatment are very serviceable.

The paper was discussed by Drs. Jacobi, Lewis, and Janvrin, of New York; Goff, of Cazenovia, and a delegate from Brooklyn.

Dr. Samuel Sherwell, of Brooklyn, exhibited a set of ingeniously devised

NASAL, PHARYNGEAL, AND LARYNGEAL SCISSORS.

It is an absolutely pointless scissors, with joints, so that it has four blades.

Dr. A. Jacobi, of New York, read a paper

ON CREMATION,

sent by Sir Spencer Wells, of London, England, honorary member, in which purifying by fire was advocated.

Dr. S. Van Etten, of Port Jervis, Vice-President, in the Chair.

Dr. Martindale, of Richmond County, read an abstract of a paper, in which he related a case of

THROMBOSIS OF THE RIGHT RADIAL ARTERY COMPLICATING ENDOCARDITIS,

occurring in a patient considerably beyond the middle period of life.

Dr. W. Gill Wylie, of New York, read a paper entitled

PRACTICAL OBSERVATIONS IN ABDOMINAL SURGERY.

1. The use of hot water within the peritoneal cavity after laparotomy, for the purpose of preventing shock.
2. The use of laxatives and enemas after laparotomy and in septic peritonitis.
3. The abuse of tapping abdominal tumors.

He gave a synopsis of one hundred and twenty-five cases of laparotomy.

INVITED GUESTS.

Drs. W. H. Murray, G. L. Ullman, W. J. Nellis, and R. N. Steenberg, of Albany; C. B. Herrick, of Troy; F. L. Classen, F. D. Morrill, Henry Hun, and J. F. Barker, of Albany; C. W. Wilbur, of Rochester; D. W. Houston, of Cohoes; E. H. Howard, of Monroe County; J. S. Van Vechten and J. B. Ransom, of Franklin County.

The Society then adjourned, to meet in the Assembly Chamber at eight o'clock, to listen to the President's annual address.

Evening Session.

THE PRESIDENT'S ANNUAL ADDRESS.

The Society met in the Assembly Chamber, and listened to the entertaining and instructive address of the President, Dr. W. S. Ely, of Rochester. His theme was

THE PHYSICIAN IN SCIENCE AND LETTERS,

which was elaborated under the title, "The Achievements in Science and Letters of Men who have been connected with the Medical Profession."

The illustrations were taken from those whose names have been most intimately connected with philosophy, general literature, science (other than medical), and travel.

Philosophy.—Dr. John Locke, who has been called the greatest of English philosophers, was born in 1632. His first patient (while a student in medicine at Oxford, 1655) was Lord Ashley, afterward Lord Shaftesbury, on whom he diagnosticated empyema, performed an operation, and saved his life. Sydenham became acquainted with Locke, and formed a high idea of his medical skill. Locke, in turn, endorsed Sydenham's theory of the proper mode of treating disease.

Never of a strong constitution, Locke is obliged to leave England for the warmer climate of France. He returns to England and takes his degree of Bachelor of Medicine in 1674, in his forty-second year, but is again forced to travel for his health. He speaks of health as

"the only mistress he has for a long time courted, and so coy a one that he thinks it will take up the remainder of his days to obtain her good graces, and keep her in good humor."

In 1670 Locke sketched the first outline of his immortal essay concerning "Human Understanding," an essay which is said to have "done more than any other single work to rectify prejudice, to undermine established errors, to diffuse a just mode of thinking, to excite a fearless spirit of inquiry, and yet to contain it within the boundaries nature has set to the human faculties." He *sketched the outline*, but to complete the work twenty years were required.

But while Locke is the most distinguished medical representative in philosophy, there are others whose names deserve mention.

Few of us, perhaps, think often of Mr. David Hartley, whose name is connected with English philosophy. He was the son of a clergyman, born in 1705, and in his fifteenth year was sent to Jesus College, Cambridge. Like Locke, he was destined for the church. It is said that he led the life of a benevolent and studious physician. If he had given his time exclusively to medicine, he probably would have been forgotten. At the age of twenty-five he is absorbed in investigations into the cause of sensation. Sir Isaac Newton had raised the question whether vision might not be effected by the vibrations of a subtle medium which pervades all bodies, and Hartley amplified the idea into a system, affirming that vibrations small and large of the medullary substance of the nerves accounted for all of our sensations and ideas. He was the first to attempt to explain psychological phenomena on physiological principles.

The fame of Erasmus Darwin, the grandsire of the distinguished Charles Darwin, rests more on his contributions to philosophy and poetry than on his medical achievements. He is known as the author of a poem called "The Botanic Garden," and a philosophical treatise on disease, entitled "Zoonomia."

Schelling, the distinguished German philosopher, studied medicine, but immediately turned his attention to philosophy.

In France philosophy found a medical representative in Cabanis, who made valuable contributions to the physiological studies of mind.

It has been said that Cabanis "lays open our moral structure with his dissecting-knives and real metal probes, and exhibits it to the inspection of mankind by Leuwenhoeck microscopes and inflation with the anatomical blow-pipe." "Thought," he is inclined to hold, "is still secreted by the brain, but poetry and religion are the product of the small intestines, and must be cultivated medically by castor-oil."

In *Literature*, as in philosophy, medicine has had its part in shaping great minds, and one of the most charming of English writers is Dr. Oliver Goldsmith. The son of a clergyman and of the daughter of a clergyman, Goldsmith was designed for the church; but he was rejected by the bishop, before whom he appeared in red breeches for holy orders. Next he is urged to take up law, but this has no attractions for him; and finally physic is deemed the profession for which he is suited. So he goes in 1752 to Edinburgh, and spends two winters there in the study of medicine. He probably took the degree of doctor of medicine at Padua, but "all of his medical science gathered in foreign universities could not gain him the management of a pestle and mortar."

His friend Dr. Sleigh encouraged him to begin medical practice, and so he settles in Bankside, Southwark, where he endeavors to practise among the river-side poor. In the tarnished finery of a second-hand suit of green and gold, with a shirt and neckcloth of a fortnight's wear, he was, as he said to someone who asked him about his prospects, "practising physic and doing very well."

How much this reply is like the answer the young physician, starving and doing nothing, often gives to those friends to whom he is unwilling to admit his trials, hardships, and ill-success! But Goldsmith was struggling with poverty.

Among physicians, in literature, Sir Thomas Browne was mentioned, who pursued his medical studies at Oxford, Montpellier, and Padua, taking his degree of Doctor of Medicine at Leyden about 1634. He then returned to England and settled down as a physician. For recreation he wrote "Religio Medici," which during his life passed through eleven editions, being translated into Latin, Italian, German, Dutch, and French. More than thirty imitations of the book were published, which either copied the plan or stole the title. Lord Lytton called the "Religio Medici" one of the greatest prose poems in the language.

An interesting article could be written of the life of Doctor Tobias George Smollett, whose contributions to fiction and history have given him a permanent place in literature.

After studying medicine at Glasgow, he was made a physician in 1749, and commenced practice in London.

If time permitted, detailed reference might also be made to Sir James Mackintosh, who obtained his diploma in Medicine at Edinburgh in 1788, and achieved distinction as author, orator, and statesman; to Dr. John Brown, of Edinburgh, and to many others.

In *Poetry*, too, physicians, or those educated for physicians, have attained fame. All scholarly physicians claim Keats as one of their body. He was born of humble parentage, in London, 1795, and after receiving a fair education, was apprenticed at the age of fifteen to a surgeon. He died of consumption, at the age of twenty-four, and was buried in the English Cemetery at Rome, of which Shelley said that it was beautiful enough to make one in love with death. "Here lies one whose name was writ in water," was the epitaph Keats directed for his grave, so evanescent did he believe his reputation would be.

Another poet connected with the medical profession is George Crabbe. On leaving school, in his fourteenth year, he was apprenticed to a rough country doctor, and had to share the bed of the doctor's stable-boy. After six years of study, during which time he has written several poems, he proceeds to London, where he had a narrow escape from being carried before the Lord Mayor as a resurrectionist.

Mark Akenside, a physician as well as a poet, was the son of a butcher, who maimed him for life by a cut from his cleaver. When nineteen years old, he is sent to Edinburgh to study for the ministry. He soon revolts from divinity, and begins to study medicine. After three years spent in Edinburgh, he goes to London, where he obtains the degree of Doctor of Medicine in 1774. He was considered among the poets the best Greek scholar since Milton, and is described as a stiff-limbed, starched personage, with a lame foot, and pale, strumous face, a long sword, and a large, white wig.

Some may also recall Sir Richard Blackmore, who, although he obtained eminence and practice as a physician and wrote many treatises on the art of healing, is best remembered by his poetry, most of which he composed while visiting his patients. Pope said: "There's Sir Richard, in that rumbling old chariot of his, between Fleet Ditch and St. Giles pound, shall make you half a Job."

Lastly, reference may be made to Sir Samuel Garth, physician in ordinary to King George the First. He delivered the Harveian oration in 1697, and wrote a poem on "The Dispensary" at the time this charity was first instituted in London to counteract prescribing by the apothecaries over their counters.

But in *Science*, also, we have distinguished representatives in men who chose the medical profession, and were led by its study into some field of scientific research with which medicine is allied. No more interesting illustration of this can be cited than Doctor Louis

Agassiz. He was the son of a Swiss clergyman and early showed a fondness for natural science. At fifteen years of age a commercial life is projected for him, but so strongly does he beg to be permitted to continue his studies that he is sent to Lausanne to school. His uncle, who was a physician, is impressed with his fitness for a medical career, and advised that he should be permitted to study medicine. In 1826 Agassiz is found at Heidelberg, where are teachers whose influence upon him must have been great. His mother, who was the daughter of a physician, is fearful that he will give up his medical studies, so she writes to him: "How is it that you look forward only with distaste to the practice of medicine? Have you reflected seriously before setting aside this profession? Indeed, we cannot consent to such a step." His father shares the mother's feelings, and strives to repress the natural history bent in his son. Thus he writes: "If it be absolutely essential to your happiness that you should break the ice of the two poles in order to find the hairs of a mammoth, or that you should dry your shirt in the sun of the tropics, at least wait till your trunk is packed, and your passports are signed, before you talk with us about it." . . .

But the study of natural history he cannot abandon, and he finally writes to his father, "I hope yet to prove to you that with a brevet of a doctor as a guarantee, natural history may be a man's bread-winner, as well as the delight of his life."

He died in 1873, regretting that he could not live four more years, in order to complete the work he had contemplated. "His daring conceptions were only equalled by the unwearied industry and genuine enthusiasm with which he worked them out."

Any allusions to the achievements of physicians in other fields of science than medicine would be incomplete which omitted reference to Copernicus, "the Columbus of the heavens," "the setter forth of truths hitherto unknown, and the impugner of the rights of time-honored dogmatism." He obtained the degree of doctor at Padua in 1499.

Scanning the heavens by night, he exercised by day what Dean Milman calls "that blessed privilege of the Christian physician—the gratuitous care of the poor."

A century later Galileo, while prosecuting his medical studies at Pisa, invented the pendulum, and used a modification of it, known as the pulsilogon for accurately counting the pulse.

Travel.—The name of Elisha Kent Kane, M.D., will ever be prominently associated with Arctic exploration. He was graduated in medicine in Philadelphia in 1842. His restless spirit soon led him to enter the U. S. Navy as surgeon, and to make a voyage around the world. Next he served in the Mexican War. In 1850 he joined the First Grinnell Expedition in search of Sir John Franklin, and in 1853 made a second voyage for the same object.

Mungo Park may not be remembered by all as Dr. Mungo Park. He was designed by his father for the Church, but preferring the medical profession, was apprenticed, when fifteen years of age, for three years to one Thomas Anderson, a surgeon of Selkirk. At the expiration of his service as surgeon's apprentice he seeks Edinburgh, and spends three years there in studying medicine. Imbued with a desire to travel, he sails to Africa, under the auspices of the African Association, and returns in 1797 with the proud distinction of being the first of modern Europeans to reach the well-nigh fabulous waters of the Niger.

Lord Brougham said: "In Mungo Park the world has lost a great man, and one who was as well qualified, as he was inclined, to have been one of its greatest benefactors."

But great as Dr. Park was, he but prepared the way in African exploration for his still greater fellow-countryman, Dr. David Livingstone, whose career and history must be fresh in the minds of all. He was born in Scotland in 1813. In his tenth year we find him working in a cotton-mill, and after the hard work of the day striving to obtain some advantages from a night-school. His parental training had been markedly religious in its character, and Livingstone was early led to determine to devote himself to the alleviation of human misery.

His medical degree is obtained in 1840, his graduating thesis being upon the Stethoscope. "It was with unfeigned delight," he says, "that I became a member of a profession which is pre-eminently devoted to practical benevolence, and which, with unwearied energy, pursues, from age to age, its endeavors to lessen human woe."

In bringing to a close, a review of the lives of certain physicians whose reputation had been made in other callings than medicine, Dr. Ely desired to state that allusion to living exemplifications of the subject had been purposely omitted.

It would be observed that men had been led, in some cases by choice and in others by necessity, to unite other studies with that of medicine, or to subordinate the latter to the former. The "Religio Medici" was written, as the author affirms, for his personal amusement primarily. Dr. Hartley's philosophical work was his recreation. Every physician, who can command time, may find recreation in studies of a literary or scientific character, and great satisfaction in the results of such studies. It had, too, been made apparent, that the study of medicine had often suggested and aided the subsequent prosecution of other pursuits. To but few, indeed, is it given to frame an essay to rank with that of Locke, to create a "Vicar of Wakefield," to compose an "Ode on a Grecian Urn," to rival the original work of an Agassiz, or to lay bare the secrets of an unexplored continent. Among the number who have enriched philosophy, or adorned literature and poetry, or advanced science, or added to our knowledge of unknown regions of the globe, those who have been connected with the medical profession have a special claim upon our recognition and admiration.

The Society gave the President a vote of thanks for his instructive and interesting address, and then adjourned to participate in a banquet to be given at the Delavan.

THURSDAY, FEBRUARY 3D—THIRD DAY—MORNING SESSION.

The Society was called to order by THE PRESIDENT.

Prayer was offered by REV. H. A. STARK.

DR. CHARLES H. PORTER, of Albany, offered resolutions giving a vote of thanks to Sidney Ringer and Sir Spencer Wells for their exceedingly valuable contributions, and that their papers be referred to the Committee on Publication.

CONTAGIOUS OPHTHALMIA.

DR. LUCIEN HOWE, of Buffalo, offered the following resolutions, which were adopted:

Resolved, That a committee of three be appointed to investigate the question of blindness due to contagious ophthalmia in this State and the United States, and recommend means for its prevention.

Resolved, That the Society respectfully requests the President of the United States to accord such facilities for prosecuting the investigation as may be at his command.

Resolved, That this Society asks officials in charge of institutions to furnish any information on the subject which they may have.

REPRINTS OF THE PRIZE ESSAY.

DR. CARPENTER, of New York, moved that reprints of the prize essay on "Sanitation of School Life and Schoolhouses" be distributed to all municipal and other authorities and officials having under their management schoolhouses.

The motion was supported by Drs. Jewett, of Canandaigua; Mercer, of Syracuse; and S. B. Ward, of Albany, and the number was limited to fifteen hundred copies, in the discretion of the Secretary.

Dr. W. H. Richardson, of New York, was elected an invited guest.

Drs. C. S. Allen, Rensselaer County, and H. Bendell, Albany, were elected permanent members.

Dr. L. D. Bulkley, of New York, read a paper on

SYPHILIS OCCURRING IN CONNECTION WITH OTHER DISEASES OF THE SKIN.

Acne, eczema, psoriasis, and tænia versicolor were considered, also chancroid and gonorrhœa.

THE REPORT OF THE COMMITTEE ON NOMINATIONS

was read by W. E. Ford, of Utica, Secretary.

President—Alfred L. Loomis, of New York.

Vice-President—A. M. Phelps, of Chateaugay.

Secretary—William Manlius Smith, of Syracuse.

Treasurer—Charles H. Porter, of Albany.

Censors—Southern District: J. S. Warren, New York; M. B. Chase, Brooklyn; W. H. Helm. Eastern District: J. Lewi, Albany; Thompson Burton, Montgomery County; L. McLean, Troy. Middle District: J. G. Orton, Binghamton; Robert Frazier, Oneida County; I. N. Goff, Cazenovia. Western District: Theodore Dimon, Cayuga; M. S. Kettenger, Niagara County; David Littele, Rochester. Of the College of Medicine, Syracuse University: Harvey Jewett, Canandaigua.

Committee of Arrangements—S. B. Ward, of Albany; E. L. Partridge, of Brooklyn; F. C. Curtis, of Albany.

Committee on By-Laws—W. C. Wey, of Elmira; H. G. Piffard, of New York; William Manlius Smith, of Syracuse.

Committee on Hygiene—E. V. Stoddard, of Rochester; F. C. Curtis, of Albany; A. N. Bell, of Brooklyn; J. P. Creveling, of Cayuga; E. Hutchinson, of Utica; W. H. Bailey, of Albany; E. F. Brush, of Mount Vernon.

Committee on Legislation—Laurence Johnson, of New York; F. R. S. Drake, of New York; H. Bendell, of Albany.

Committee on Ethics—A. Jacobi, of New York; A. Matthewson, of Brooklyn; J. W. Whitbeck, of Rochester.

Committee on Prize Essay—George F. Shrady, F. P. Foster, Wesley M. Carpenter, of New York.

Committee on Publication—Wm. Manlius Smith and Alfred Mercer, of Syracuse; Charles H. Porter, of Albany; and Wesley M. Carpenter, of New York.

Honorary Members—E. Landolt, of Paris; James Grant (Bey), of Cairo; K. A. P. Grinnell, of Burlington, Vt.; Bennet Dowler, of New Orleans.

Eligible to Honorary Membership—H. C. Allchin, of London; D. N. Wilcox, of Lee, Mass.

Delegates to Massachusetts State Medical Society—Daniel Lewis, of New York; C. H. G. Spencer, of Watertown.

Delegate to New Jersey State Medical Society—A. P. Morrow, of New York.

Delegate to Pennsylvania State Medical Society—F. A. Henkel, of Erie County.

Delegates to New Hampshire State Medical Society—O. B. Douglas, of New York; Harvey Jewett, of Canandaigua.

Delegates to Vermont State Medical Society—M. H. Burton, of Troy; W. O. Moore, of New York; A. M. Phelps, of Chateaugay.

Delegate to Connecticut State Medical Society—N. C. Husted.

Delegate to Canadian Medical Association—Lucien Howe, Buffalo.

PAPERS READ BY TITLE.

By J. V. Kendall, Baldwinsville, "The Obstetrical Experience of a Country Practitioner;" by Laurence Johnson, New York, "The Therapeutic Use of Bismuth;" by A. Jacobi, New York, "Treatment of Membranous Croup," "Peritonitis of the Infant;" by F. W. Henkel, Buffalo, "Irregularities of Septum Narium;" by George Henry Fox, New York, "Errors in the Treatment of Skin Disease;" by A. Dann, Rochester, "An Unusual Method of ridding the Male Bladder of Small Calculi;" by Franklin Townsend, Jr., Albany, "Ovulation and Menstruation;" by J. R. Leaming, New York, "Diagnostic Areas of the Human Chest;" by H. Knapp, of New York, "Ninth and Tenth Series of One Hundred Consecutive Cataract Extractions;" by Wm. Hailes, Albany, "Obituary Sketch of Henry March, of Albany;" by H. D. Didama, Syracuse, "Obituary Sketch of R. W. Pease, of Syracuse;" by A. Hutchins, Brooklyn, "Cascara Sagrada."

AMENDMENT TO THE BY-LAWS.

An amendment to the By-laws was adopted which gives the President the power, *ad interim*, to receive and accept resignations from committees, and to fill the vacancies that may thus occur.

Dr. Pillsbury, of Middleton, read a paper on "Albuminuria treated by Glonoin, and Bromide of Potash in the Treatment of Rheumatism."

VOTES OF THANKS.

On motion by Dr. Laurence Johnson, New York, the thanks of the Society were voted to all railroads which had given reduced rates; also to the custodians of the City Hall.

On motion by Dr. Vander Veer, Albany, the Society gave the retiring President a vote of thanks for the able and impartial manner in which he had presided over its deliberations.

Drs. W. O. Marcelius and Albert Marsh were elected invited guests.

Dr. Glover, of Amsterdam, exhibited a modification of Chadwick's gynecological table.

The committee on Dr. Howe's resolution concerning contagious ophthalmia consists of Drs. Lucien Howe, of Buffalo; C. R. Agnew, of New York; and E. V. Stoddard, of Rochester.

Several more papers were read by title and the Society adjourned.

Simple Apparatus for Staining Tubercle Bacilli.—Rapidly to prepare an aniline-water-fuchsin solution Dr. Saccharow uses the following practical apparatus: To a common holder with stand, as used in laboratories to keep reaction tubes, etc., in an upright position are attached: 1. A glass bottle with the bottom upside down and filled with aniline water. Whatever too much aniline is present accumulates in the lower part. Through the neck pass two glass tubes. One is intended to admit air, the other is provided with a piece of rubber hose and some little arrangement, as a clamp, for stopping the flow of the aniline water. 2. A funnel and paper-filter, which fits into a glass tube just beneath the bottle, and which contains fuchsin-crystals, and has a pointed end. 3. Underneath this is another funnel and filter, through which the aniline water, now containing fuchsin, gradually passes from above into a watch-glass, so that the solution is filtered the second time. With this simple apparatus one may prepare at any time a fresh solution of fuchsin in aniline water. As soon as the fluid is obtained the clamp on the rubber hose is closed, and the apparatus ceases working until the clamp is opened and the aniline water allowed to flow out over the fuchsin again.

NEW YORK ACADEMY OF MEDICINE.

SECTION IN SURGERY.

Stated Meeting, January 10, 1887.

STEPHEN SMITH, M.D., CHAIRMAN; A. B JUDSON, M.D., SECRETARY.

OFFICERS FOR THE ENSUING YEAR.

DR. R. F. WEIR was elected chairman, and Dr Robert Abbe secretary.

SUPPURATIVE NECROSIS OF THE JAW—ABSCESS OF THE FRONTAL SINUS.

DR. GOODWILLIE related the history of a patient who had been sent to him by the late Dr. Farnham in, 1880. There was great swelling of the face and neck from necrosis of the jaw, and suppuration following disease of one of the lower molars. Treatment was by aspiration with the hypodermic needle. Upward of twenty operations were thus performed under the nitrous oxide anæsthetic, with remarkably favorable results, as shown by wax casts taken before and after treatment.

Another patient was shown, who had received a blow from a hot cinder from the Elevated Railroad. The result was an abscess involving the sinuses of the frontal bone. Dr. Goodwillie had trephined and inserted a platinum drainage-tube in the inner and anterior part of the roof of the orbit. The manipulation of the platinum tube, and the treatment of the sinus by peroxide of hydrogen injections, was exhibited to the Section. The result sought in this case, and obtained in the preceding case, was recovery without disfigurement or deformity.

DR. GIBNEY discussed the subject of aborting abscesses of the face or elsewhere. He favored the bringing about of this result, and had seen many cases in which recovery from joint-disease had been attended with the disappearance of abscesses without direct treatment, and without discharge.

DR. R. W. TAYLOR read a paper entitled

IODOFORM ERUPTIONS.

He first considered briefly the general toxic effects of the drug, and spoke of the necessity of their knowledge by those who used it, since it was generally so ill understood—particularly the mild form of the poisoning, the chief symptoms of which were increasing weakness, emaciation, and delirium, with all of their concomitant symptoms, all of which were frequently passed unrecognized as to their origin in the systemic action of iodoform. He then detailed a series of personal cases as well as those reported by Zersil, Fabre, Neisser, Treves, Goodell, Fifield, and others. The conclusions drawn from these cases were: First, that iodoform quite frequently produced in those who used it freely—assistants at hospitals and dispensaries—a mild erythema, particularly of the fingers and about cuts, which caused little or no uneasiness and ceased when the use of the drug was discontinued; secondly, in certain cases of open granulating wounds, a longer or shorter time after beginning the use of the agent, two forms of erythema might be observed, the one simple, superficial, and more or less extreme, the other well marked, attended with much œdema; both of these varieties might be complicated with papulation, vesiculation, pustulation, and in very bad cases with phlegmonous inflammation; thirdly, an eruption occurred from applying the agent to the throat or by smelling it, in which absorption of the drug occurred, and very soon severe dermal lesions of the face, head, hands, feet, etc., were seen; fourth, that in these cases there seemed to be a distinct iodoform idiosyncrasy, such as we see in some cases of quinine, iodide of potassium, and ipecac. Dr. Taylor considered further, minutely, the divisions of eruptions, and entered briefly into their pathogenesis.

DR. JACOBI said that Dr. Taylor's cases reminded him of the frequent results of the administration of small doses of iodide of potassium. He recalled one case in particular, in which a young man had suffered severely from stomatitis, conjunctivitis, and urticaria.

DR. GIBNEY stated that he frequently resorted to the application of iodoform, for the excoriations caused by adhesive plaster in the treatment of cases of hip-disease, but he had as yet failed to observe any unpleasant effects beyond the occurrence of slight itching in one or two instances.

DR. P. A. MORROW had occasionally seen erythematous and œdematous infiltrations from the topical application of iodoform, but had never observed a generalized eruption from this cause. Some cases produced papules and vesicles, and in a few cases there had been urticaria, and even erysipelas. The eruption appears after protracted use of the drug, and its acme may not be reached till after the application has been discontinued. These effects of the use of iodoform are the result of the contained iodine. They are analogous to the groups of symptoms known as iodism. A textural predisposition of the skin permits the drug to produce irritation of the sensory nerves, causing reflex paralysis of the vaso-motors of the vascular area affected. The result is dilatation of the vessels, with erythema and various degrees of dermatitis. Dr. Morrow knew of no eruptive accidents from the internal use of iodoform.

DR. C. S. WOOD had seen several cases in children, and considered that the drug excites a neurosis in susceptible persons, like the neurotic effect which is produced in some persons by the administration of five grains of blue pill, or the smell of ipecac.

DR. STEPHEN SMITH recalled the case of a physician who, after receiving the iodoform spray every day for two or three weeks for a follicular tonsillitis, was suddenly attacked with drowsiness and mental hebetude, so marked and persistent that he spent a large part of the day in studying his visiting list, making frequent but vain attempts to formulate his thoughts in words. There was headache but no fever, and recovery was rapid and complete.

The Section then adjourned.

SECTION IN OBSTETRICS AND DISEASES OF WOMEN AND CHILDREN.

Stated Meeting, January 27, 1887.

ALEXANDER S. HUNTER, M.D., CHAIRMAN; HENRY GRISWOLD, M.D., SECRETARY.

OFFICERS FOR THE ENSUING YEAR.

DR. E. L. PARTRIDGE was elected Chairman, and DR. L. EMMETT HOLT Secretary.

DR. S. HENRY DESSAU read a paper entitled

CERTAIN PECULIAR FEATURES OF BRONCHITIS AS IT OCCURS IN CHILDREN.

Before speaking of the subject proper, Dr. Dessau referred to the method of examining the thorax in children, and said that the chest should always be completely uncovered and that auscultation should be done with the stethoscope. The temperature of the child should always be taken, and he preferred to do it in the rectum.

Bronchitis limited to one lung.—Of these cases Dr. Dessau had seen several; in three the smaller bronchi were involved, as determined by the character of the râles and the absence of bronchial respiration. In some there was elevation of temperature to 102° to 104° F., and the pulse and respiration were accelerated. It was the common opinion that bronchitis attacks both lungs, and such was the case ordinarily; but it was equally true that it might affect only one lung, or only a portion of one lung, or it might be confined to the bronchi of the

first, second, or third order. The interesting point in these cases was the differential diagnosis between the bronchitis and pneumonia and pleurisy.

The next point of special interest was the fact that a slight bronchitis may give rise to enlargement of the lymphatic glands at the roots of the lungs, to be followed rapidly by caseous degeneration, meningitis, and general tuberculosis.

Bronchitis more or less severe may occur in the course of summer diarrhœa in children. He regarded the cause as analogous to that which produces pulmonary congestion in cholera.

Treatment.—Under this head attention was first directed to hygienic conditions and prophylactic measures. As a prophylactic cold bathing was especially recommended. Except in severe cases it was not necessary to keep the child in the house, provided it was kept warm while in the open air. In private practice the child may be kept in a room well ventilated and having a temperature of about 65° F. The addition of steam in the air of the room would be of advantage in severe cases, and it might contain a small quantity of the vapor of turpentine. He seldom uses opium, but relies upon stimulating embrocations, mustard poultices, aconite, belladonna, ipecac, spirit of mindererus, cod-liver oil with or without the hypophosphites of lime and soda, muriate of ammonia, and the children should have abundance of water to drink, as had been recommended by Dr. Jacobi.

Dr. L. Emmett Holt agreed with Dr. Dessau concerning the use of the stethoscope, and also the uselessness of attempting to auscultate the chest through the clothing.

As to unilateral bronchitis he thought that a temperature of 103° or 104° F., persisting for a week or ten days, would indicate broncho-pneumonia rather than bronchitis. Persistent high temperature was perhaps the most reliable symptom in favor of broncho-pneumonia in making a differential diagnosis.

Concerning bronchitis attended by enlargement of the bronchial glands, followed rapidly by meningitis and general tuberculosis, it had seemed to him that these cases were better explained on the supposition that meningitis and pulmonary tuberculosis began at the same time.

With regard to medicinal agents, he had used terebene with very satisfactory results, particularly in the chronic cases when a hard, dry cough persisted—even though the physical signs had cleared up—and the child was far from being well.

Dr. J. H. Fruitnight agreed in the main with what Dr. Dessau had said in his paper, yet there were some points in which he should differ with him. He thought that more stress should have been laid on inspection of the chest, and also that the pleximeter and hammer were preferable to the fingers in making percussion. Although the stethoscope should be our main reliance, auscultation by the unaided ear should not be discarded entirely. He thought, also, that the cases in which there was enlargement of the lymphatic glands and secondary development of general tuberculosis were very apt to be overlooked. There was one symptom which should have received more prominence, and that was a peculiar spasmodic cough the clang of which resembled whooping-cough, but the physical signs and the preceding history of the case would enable us to readily eliminate that affection.

With regard to persistent high temperature, he should regard it as most probable that it was evidence of broncho-pneumonia rather than bronchitis.

As to treatment, he would be chary concerning the use of antimonials. What Dr. Holt had said with regard to terebene he could corroborate. He had found the tincture of sanguinaria to be a very serviceable remedy. He used the preparations of opium merely for the purpose of securing rest and allaying an irritative cough.

Dr. E. L. Partridge said that there was one point especially in the paper which was of practical importance, and that was with reference to allowing the children to go about while suffering from bronchitis, particularly out of doors under proper precautions as to clothing, etc. It had always seemed to him that there was more danger in carrying these children from one room to another than in taking them out. For the difference in temperature of rooms was much greater than was generally supposed. To test or to regulate the temperature of any room he always insisted that the thermometer should be placed on a level with the probable situation of the child while occupying it.

He had found the camphorated tincture of opium, given in small doses frequently repeated, a very efficient remedy; it diminishes the secretion of mucus, steadies the heart, and overcomes restlessness and pain.

Dr. T. J. Kearney said it was not till three or four years ago that he had his attention directed to the frequency of the occurrence of unilateral bronchitis, and since that time he had seen several cases. Poultices, intelligently applied, he regarded as very serviceable.

The Chairman was quite in accord with what the author of the paper had said, and would criticise only so far as to say that he believed it to be better in preparing a mustard poultice, to use a difinite quantity of mustard to a certain quantity of flaxseed meal, as 1 to 16, rather than to dust the mustard upon the surface.

Dr. Dessau, in closing the discussion, said, with regard to persistent high temperature being a symptom of broncho-pneumonia, that he was inclined to take that view of the case, but from the fact that there was no bronchial respiration nor dulness, he was led to believe that it was one of unilateral bronchitis involving the smaller bronchi. So far as antimonials were concerned, he had advised them in such small quantities that there would probably be no danger in so using them.

The Section then adjourned.

NEW YORK NEUROLOGICAL SOCIETY.

Stated Meeting, January 4, 1887.

C. L. Dana, M.D., President, in the Chair.

Dr. W. H. Porter presented

THE KNEE-JOINT AND SPINAL CORD IN A CASE OF SPINAL ARTHROPATHY.

The patient had suffered from locomotor ataxia in a typical form for about six years. The joint troubles developed several years before death. The knee was enlarged, there was partial dislocation and venous hypertrophy with rarefication. In the joint were found a large number of loose cartilages, the articular cartilages were worn away, and there was eburnation of bone.

In the discussion by Dr. L. Weber, Dr. Sachs, Dr. Starr, the President and others, the recent views of Virchow, that the spinal arthropathy was not a special trophic disorder characteristic of tabes, was referred to. The general opinion seemed to be that the arthropathy was a condition resembling that of rheumatoid arthritis, but somewhat modified by the peculiar condition of the nerves and nerve-centres in posterior sclerosis.

Dr. Porter also presented the spinal cord in a case of

LOCOMOTOR ATAXIA RUNNING ONLY A SIX WEEKS' COURSE.

The patient had been in the Presbyterian Hospital, and his history was obtained with special care. No evidence whatever of any spinal symptoms previous to about six weeks before death was obtained. There was no history of diphtheria or an infective disease.

Sections of the cord had been made by Dr. C. L. Dana, stained by Weigert's method and with aniline blue.

They showed a very marked degree of posterior sclerosis affecting both the columns of Goll and of Burdach.

NOTE ON APHASIA WITH REFERENCE TO LOSS OF NOUNS.

DR. PUTNAM-JACOBI read a paper on that form of aphasia in which the defect is limited to the loss of nouns. Seventeen cases out of a total of one hundred and sixteen analyzed offered this peculiarity, which had not failed to attract the notice of authors. Several explanations had been offered, none of which seemed to the writer completely satisfactory. Anatomical data were not at present sufficient to throw much light on the matter, further than to demonstrate that the symptom was probably always associated with diffuse, and not with focal, lesions. These lesions could not fail to lie on the sensory side of the speech mechanism, and for reasons detailed at length in the paper must especially involve the paths between the auditory and visual centres, through which the auditory impression or sign of the object became habitually associated with the visual impressions. The writer maintained that the act of speech always involved an entire proposition, framed in the supra-sensory concept centres, probably the superadded convolutions of Broadbent. This proposition constituted a verbal conglomerate, a unity to the mind expressing it, whatever the number of separate parts into which it might be broken up. Such actual verbal conglomerates remained in many primitive languages, as that of the Greenlanders and North American Indians, where entire sentences were often inflected like a single noun or verb. In our languages the conglomerate or proposition to be expressed is composed of the reminiscences of auditory signs which have become fused with similar reminiscences of visual impressions of things and their relations. If the visuo-auditory paths are interrupted the signs or names of things will be dislocated from their habitual association with the other characters of such things; while the visual impressions themselves remain and enter directly into the verbal conglomerate. All other parts of speech than nouns, expressing complete intellectual relations, and although remotely connected with impressions registered in the visual centre, are immediately associated only with the processes and registrations of the supra-sensory or intellectual centres. While these are intact, therefore, and unless focal lesions have altogether obliterated the memory of language, the speech of relations will be remembered and revived in expression. The objects which are involved in the relations of the conglomerate proposition will no longer be revived in consciousness by their names, but by means of their visual impressions only. These can be expressed by gestures, mimicry, or periphrases, the loss of the auditory sign being thus compensated.

PERIPHERAL NEURITIS AND THE PAINFUL PARALYSES OF EARLY LIFE.

DR. H. D. CHAPIN read the paper (see MEDICAL RECORD, p. 57).

In the discussion, DR. M. ALLEN STARR did not know of any recorded case in a patient under twenty-four years of age in which a lesion of a peripheral nerve had been found at autopsy which would account for the paralysis, and while there was great probability in the statements made by the author, they yet lacked confirmation by autopsy. The points had been brought out very well with regard to the distinctions between peripheral neuritis and anterior polio-myelitis, but he would take exception to what had been said regarding the rapidity of the onset. There were many cases of acute onset of peripheral neuritis, the patient having fever and chill, and the limbs within twenty-four hours becoming entirely immovable. Too much attention could not be given to the usually great tenderness in the muscles and nerves in multiple neuritis.

DR. RUDISCH said that he was the first to observe, as long ago as eight or nine years, a form of polio-neuritis leading to paralysis and atrophy, and which followed affections of the joint, often so-called rheumatic affections. We now saw often enough an affection of one or more joints with inflammation, followed after a while by paralysis usually curable.

DR. FISHER said a girl thirteen or fourteen years of age was brought to the dispensary with the history that one morning after taking cold she woke up with paralysis of the upper and lower extremities. At that time she had only paralysis in one leg, which he supposed, without thought of neuritis, to be ordinary polio-myelitis. Rapid improvement took place, and she recovered within six weeks, and the minister who brought her reported the case as one cured by faith. Dr. Fisher was unable to say whether the case was an affection of the anterior cornua or one of multiple neuritis.

DR. SACHS thought we should not be influenced too much by the present fashion, and call all or most of the cases formerly regarded as polio-myelitis cases of multiple neuritis. Referring to one of the cases related in the paper, and the symptom of pain, he said too much stress should not be laid upon it unless it was severe, persistent, and located distinctly along the tract of a peripheral nerve.

DR. LESZYNSKY said that the pains present in some of Dr. Chapin's cases reminded him of the pain from straining of the tendons of the extensor muscles which had been for some time in a paralyzed state.

DR. CHAPIN thought that a neuritis would occasionally explain cases which could not be accounted for on the supposition of a spinal lesion, and he would rather say halt to the universal spinal cause of disease. With regard to pain, it was difficult to locate it along a particular nerve in children, but in his cases it was acute and persistent, and not due simply to stretching of tendons.

Correspondence.

THE COMPENSATION OF EXPERT WITNESSES.

TO THE EDITOR OF THE MEDICAL RECORD.

SIR: Your editorial in the MEDICAL RECORD of January 8, 1887, concerning expert testimony and its compensation, suggests to me that the following references which I have gathered may be of interest to many in the profession.

During the past year, as a member of the committee on medico-legal matters appointed by the New Mexico Medical Society, I made a diligent search for information on this topic. Here are the results:

The decision of the Supreme Court of Alabama is the only one I learned of that was wholly adverse to the expert. *Ex parte* Dement, 53 Alabama, 389, is the title. The learned judges held that "in so testifying he would not be practising the healing art . . . he would be deposing only to things which he had learned in the course of his occupation or profession," etc. In Summers *vs.* State, 5 Texas (App.), 374, in 1879, the court followed the Alabama precedent closely.

The most important decision in favor of the physician was rendered in the Supreme Court of Indiana in 1877, and is entitled Buchanan *vs.* State, 59 Ind., 1. This is by far the most interesting and complete discussion of the whole subject, and should be well known to every physician. It was held that, "while a physician or surgeon could be required to attend as a witness to facts without other compensation than that provided by law for other witnesses, yet he could not be required to testify as to his professional opinion without the compensation of a professional fee. The professional knowledge of an attorney or physician is to be regarded in the light of property, and his professional services are no more at the mercy of the public, as to remuneration, than are the goods of the merchant, or the crops of the farmer, or the wares of the

mechanic." "When a physician testifies as an expert by giving his opinion, he is performing a strictly professional service," the exact reverse of the Alabama decision.

Curiously enough, this acute decision of the Indiana Supreme Court did not satisfy the bucolic legislators of that State, for in their Revised Statutes, 1881, Sec. 504, is a provision that "a witness who is an expert in any art, science, trade, profession, or mystery, may be compelled to appear and testify to an opinion as such expert" without other pay than that of an ordinary witness.

In U. S. *vs.* Howe (12 Cent. L. J., 193), the United States District Court for the District of Arkansas decided in the same manner as the Indiana Supreme Court.

There are statutes in Iowa, Rhode Island, North Carolina, and South Carolina, granting extra compensation to expert witnesses; that of Iowa seems to be the best—the "compensation to be fixed by the court with reference to the value of the time employed, and the degree of learning or skill required." South Carolina fixes the pay at $10 per diem in addition to the ordinary witness fees and mileage.

The New Mexico Medical Society has prepared a bill which is now before the Legislature at Santa Fé, which provides that any person, of whatever trade or profession, called to testify as to his professional opinions, shall receive extra compensation to be fixed by the court, the minimum to be $10 *per diem*, the amount to be regulated by the time and skill engaged, and providing that not more than two experts can be called on a side. The object of the last provision is to prevent the accumulation of excessive costs. Its passage intact is very doubtful.

In the Indiana decision are several references to cases of interest.

Webb *vs.* Paige (1 Carrington and Kirwein, 23), an English case in 1843. The expert was a cabinet-maker, and having objected to testifying without compensation, the Court (Maule, J.) held that a witness called to depose to a "matter of opinion depending on his skill in a particular trade has, before he is examined, a right to demand from the party calling him a compensation for his loss of time, and there is a distinction between a witness thus called and a witness who is called to depose to facts which he saw."

Greenleaf on Evidence: "The latter (an expert) is under no such obligation, and the party who selects him must pay him for his time before he will be compelled to testify."

Webb *vs.* Baird, 6 Indiana, 13. In favor of the expert, in this instance an attorney.

Blythe *vs.* The State, 4 Indiana, 525. Blythe, an attorney, objected to defending a pauper by order of the court, unless compensated. The Supreme Court sustained him.

People *vs.* Montgomery, 13 Abb. Pr. (U. S.), 207 (1871). Here it was held that an expert cannot be compelled to examine a case or otherwise prepare himself for testifying.

In the Texas case above it was decided that a physician may be compelled to testify as to the result of a post-mortem examination made by him, but he cannot be compelled to make such an examination.

Also Moch *vs.* City of Buffalo, 13 Rep., 251. Haynes *vs.* Mosher, 15 How. Pr., 216.

In Re Roelker, U. S. Dist. Court, Mass., 1854, the court decided in favor of the expert, in that case an interpreter.

Editorial in *Boston Med. and Surg. Journal*, December 22, 1881, concerning case in Superior Court, Boston, Mass. Court held "that a physician is not bound to give his professional opinion for nothing in court any more than anywhere else."

Other references are: "Duties and Privileges of Expert Witnesses," *Phil. Med. Times*, January 6, 1877; Reese's "Manual of Toxicology," Philadelphia, 1874; *Phil. Med. Times*, February 11, 1882, p. 332; *Phil. Med. News*, March 11, 1882, p. 283. See also Judge C. C. Fuller's decision in Michigan, case of State *vs.* Vanimmans, where the expert was sustained, in N. Y. MEDICAL RECORD, April 3, 1886, p. 395; *American Journal of the Medical Sciences*, October, 1882, p. 546.

The standard works of Ordronaux, Med. Jur., Sec. 114, Taylor, and Wharton have passages sustaining experts in their right to extra compensation; also Redfield is named. Honeyman's Practice and Precedents, Sec. 447. Snyder *vs.* Iowa City, 40 Iowa, 616. Code of Iowa, 1873, Sec. 3814. Dille *vs.* State, 59 Indiana, 15.

From Massachusetts I learn that "the common law permits the court to allow extra fees to experts, and such a fee is always allowed witnesses for the commonwealth. Medical experts usually receive $25 a day, and those from a distance sometimes get more; but this is optional with the court, and a physician can be compelled to testify for the usual witness fee." See this discussed by F. W. Draper, M.D., in *Boston Med. and Surg. Journal*, August 2, 1883, p. 98, where the other relations of the expert witness, besides his compensation, are well considered.

In the same journal, July 7, 1881, Dr. Walter Channing treats the same topic, and quotes a proposed law regulating expert testimony.

Again, in THE MEDICAL RECORD, June 25, 1881, p. 722, is mentioned certain action of the Rhode Island State Medical Association.

The most complete presentation of the subject is to be found in Lawson's "Expert and Opinion Evidence," where the Indiana decision is given in full, as well as that of the Alabama Supreme Court.

I have no doubt that a more thorough search than I have been able to make, so "far from the madding crowd," would reveal much more material on this subject, in which every physician has an equal interest. To favor completeness, let me add the references to Tidy's "Legal Medicine," and Mr. Henry A. Riley's contribution on the "Law of Expert Evidence" in the "Reference Handbook of the Medical Sciences." It is rather surprising that the opinion of an author so highly esteemed among all English-speaking people as Simon Greenleaf should not have constrained all our courts long ago to a unanimity of principle and action as regards compelling and compensating expert witnesses.

The other relations of the expert, whether as a partisan or an impartial scientific witness, his privileges and his woes in the courts, his duties and details as to his manner of giving his professional opinions, have all been much discussed also by physicians and by lawyers of liberal views.

FRANCIS H. ATKINS.

LAS VEGAS, N. M.

TO THE EDITOR OF THE MEDICAL RECORD.

SIR: While the case of Dr. Darby is fresh in mind, it seems proper to state that, during the November term of the District Court in this place, six physicians were kept for two days in attendance upon the court. The judge was called upon to order extra fees to be paid to witnesses who should be required to give expert testimony. He answered that he would be glad to order such fees if he had the power; but that when the Territorial Judiciary had been recently convened, for the purpose of holding a supreme court session, the matter was fully discussed, and the opinion expressed by every member that a district judge has no power nor authority in Dakota to order extra fees to be paid in cases where expert testimony is taken.

The shortest remedy, it seems to the writer, for such a state of things, is by legislation. The situation demands that a united effort be made to compass such remedy, and that you, by means of the powerful influence of your journal, effectually urge upon the various societies and members of the medical profession the importance of making an organized and simultaneous effort to secure

legislation in all the States and Territories, authorizing judges to order expert-witness fees in cases where expert testimony is taken.

When it becomes a matter of statute, the injustice and outrage to which medical expert witnesses are now so often subjected will end.

Respectfully,

S. A. BROWN, M.D.

SIOUX FALLS, DAK., January 14, 1887.

SYPHILIS FROM VACCINATION.

TO THE EDITOR OF THE MEDICAL RECORD.

SIR: The important case communicated by Dr. J. S. Prettyman to the MEDICAL RECORD prompts me to ask space to refer to some other features of this vitally important subject. Several of my personal acquaintances having become affected with cancer, in some instances terminating fatally, I have been led to inquire into the probable cause of the serious increase of late in this terrible disease. The mortality in England and Wales from 1851 to 1860 was 421 per million; from 1861 to 1870 was 534 per million; from 1871 to 1880 was 553 per million. It is allowed by physicians that cancer may be due to impregnating the blood with impure matter, and it is obvious that there is no method by which this is done on so large a scale as in vaccination and revaccination. It is not denied that vaccination is an exciting cause of infantile syphilis, and according to the Registrar-General's returns—No. 433, dated 1877; and Infant Mortality, No. 392, dated 1880—the increase in this disease since vaccination has been made compulsory is fourfold. Mr. Hibbert, formerly Secretary to the Local Government Board, said, in July, 1880, that this terrible increase was one of the most unsatisfactory features of the Vaccination Acts, and a reason why further legislation was needed. Dr. William Forbes Laurie, late Medical Director of St. Saviour's Cancer Hospital, Regent's Park, was thoroughly convinced that the great increase of cancer was due to vaccination, and he wrote to several members of Parliament inviting them to visit the hospital, and witness the dismal results of the operation. He says this increase of cancer is "attributed by some medical men to the large amount of syphilitic disease, with which vaccine lymph is impregnated," and by others to the direct impregnation of healthy persons with lymph imbued with scrofulous and cancerous matter. The *British Medical Journal* for May 19, 1883, in a leading article on the increasing fatality of cancer, puts the mortality from 1850 to 1855 at 302 per million; while in the year 1875 it had risen to 480 per million; and, in considering the causes of this increase, says: "Our negligence in dealing effectually with other diseases may also favor its dissemination; for if syphilitic inflammation may become cancerous, it is clear that the spread of syphilis has scattered throughout the population innumerable possible seeds of cancerous degeneration." The *London Hospital Gazette*, a short time ago, said that fifty infants were admitted into one hospital within a month suffering from syphilitic disease, from some of whom vaccine lymph had been taken. This is an indication how the cancer-spreading virus may be distributed. It would be unbecoming in me to dogmatize upon a subject which is admitted to be a puzzle to the medical profession, but I venture to hope that some of the medical correspondents of your impartial columns who have had the opportunity which clinical experience affords will, in the interests of the public health, be able to say whether the suggestion I have made is borne out by facts.

Yours faithfully,

WILLIAM TEBB.

NATIONAL LIBERAL CLUB, CHARING CROSS,
LONDON, January 11, 1887.

VACCINATION is just now a profitable pastime for the old and young practitioner.

New Instruments.

A COMBINED CURETTE AND DOUBLE CATHETER.

BY GEORGE E. ABBOTT, M.D.,

NEW YORK.

I SEND herewith a drawing of a double catheter with a curette attachment, which has been found to work well by my friends and myself in several cases.

It consists of a fac-simile of a double catheter lent to me by Dr. Edwin F. Ward, of this city, which has unusually large fenestræ for the free return of the injected fluid, to which may be attached the curettes *D*, *E*, *F*, on the round end of the catheter *G*.

The curettes are of various sizes, and dull or sharp, as desired.

For curetting the anterior surface of the uterus or other cavity, screw the curette on as far as it will go, when it will be in position, as at *D*, Fig. 1, or *A*, Fig. 2.

FIGS. 1 AND 2.

For the posterior surface, give the curette a half turn, when its concavity will look backward, and will attack the posterior surface well.

For curetting the sides, unscrew the curette a quarter turn or a three-quarter turn, when it will have the position of Fig. 2, *C* or *B*.

It will at first seem that, when placed in these positions, the curette would not attack its work, but would turn this way and that. That this is not the case can be demonstrated by curetting the sides of the hand as it grasps the instrument.

The curettes are attached by a fine thread and a long shoulder or tenon, as at *b*, and thus allow of the positions above indicated without loss of firmness.

In use, a Davidson's syringe or irrigating tube is attached to the catheter at Fig. 1, *a*, through which the antiseptic fluid passes, emerging at the little holes at the base of the curette *D*.

The return-current passes through the large fenestræ below *b*, and out at *c*, into a white receiving-vessel. (It will add much to the comfort of the surgeon to have a tube attached to *c*, thus avoiding wetting his hands, etc.)

The advantages gained are:

1. In making the parts thoroughly aseptic. The antiseptic fluid being allowed to run before entering the cervical canal, and during the time of operating.

2. The denuded surfaces are immediately covered by the antiseptic fluid before infection can possibly take place.

3. The detritus is immediately and fully removed.

4. The surgeon can see by the returns in his white receiving-bowl what he is doing—fungosities, membrane, pure blood, or clear antiseptic fluid.

5. No bacteria are introduced, as in the use of the ordinary curette.

6. No fungosities or detritus remain to decompose.

It is hoped that the instrument will be of service to the profession, who can obtain it from Messrs. Tiemann & Co., of this city.

AURAL TROUBLES.—A French medical writer, in treating of the ear, says that this organ is subject to a number of painful affections, among which may be mentioned otitis, Wagner's music, etc.

Army News.

Official List of Changes in the Stations and Duties of Officers serving in the Medical Department, United States Army, from January 23 to January 29, 1887.

MORRIS, EDWARD R., First Lieutenant and Assistant Surgeon. Granted leave of absence for one month, to take effect about March 10, 1887, with permission to apply for an extension of twenty days. S. O. 6, Division of the Pacific, January 19, 1887.

Medical Items.

CONTAGIOUS DISEASES—WEEKLY STATEMENT.—Report of cases and deaths from contagious diseases reported to the Sanitary Bureau, Health Department, for the week ending January 29, 1887:

	Cases.	Deaths.
Typhus fever	0	0
Typhoid fever	13	5
Scarlet fever	47	13
Cerebro-spinal meningitis	5	4
Measles	453	54
Diphtheria	109	33
Small-pox	23	3
Yellow fever	0	0

THE TREATMENT OF THREAD-WORMS IN CHILDREN.—Dr. Sidney Martin writes as follows to the *Practitioner* of October, 1886: "The complete cure of thread-worms in children is often very difficult. While the ordinary methods used, such as rectal injections of salt and water, infusions of quassia, and other remedies, do good for a time, yet they often fail to relieve the attendant symptoms of 'worms,' symptoms usually very irregular, and in some cases severe in character. In many cases, though the irritation about the anus is relieved by injections, the irregularity of the bowels and the disturbance of sleep remain the same. This is probably due to the fact that the habitat of the worms is higher up in the large intestines, where no remedy introduced by the rectum can reach them. In many cases I have found that rhubarb, in small doses, brings away large numbers of worms, and at the same time regulates the bowels, so that the use of injections may in most cases be dispensed with. The formula which I have found most useful is as follows, varying slightly with the age of the child: ℞. Tincturæ rhei, ♏iij.; magnesii carbonatis, gr. iij.; tincturæ zingiberis, ♏j.; aquam, ad ʒj. This is to be taken twice or three times daily, according to the effect on the bowels. Whether the rhubarb acts as a vermicide or simply by 'moving the worms on,' I am unable to say."

DE SENECTUTE.—To most people there is something peculiarly fascinating in a description of the habits and constitution of persons who have lived to extreme old age; even if the reader is not possessed by a secret hope that he may rival them in vitality, his imagination is stimulated by the history of men and women who were born in the last quarter of the eighteenth century, living on to witness the achievements, to share the sorrows, and, in their own persons, to afford matter for the scientific speculations of the last quarter of the nineteenth century. The series of fifty-two cases of reputed centenarians got together by the Collective Investigation Committee has been analyzed by Professor Humphry, of Cambridge, who is able to state positively that, in 11 cases, 2 males and 9 females, the evidence left no doubt that these old people were really centenarians. In the large majority of the cases the evidence was not conclusive, but there can at least be no doubt that all had attained to a very great age. Swift, in his "Voyage to Laputa," has given a description of extreme old age so appalling, and yet so nearly in accordance with everyday experience, that it is a pleasure to find Professor Humphry championing our common humanity, and describing centenarians who were cheerful, retained their faculties and their interest in relatives and old friends, and even showed a marked liking for making new acquaintances. The centenarian generally comes of a long-lived family, and is a person of active habits, both of body and mind, a good sleeper, endowed with a good appetite, and a tranquil, cheerful disposition. One centenarian collier had always drank as much as he could, and expressed his intention of continuing this habit, but all the others were stated either to have been moderate or very moderate in the indulgence of this taste, or to have been total abstainers. The majority also did not take tobacco in any form, but one chewed the drug, and seven, of whom four were women, smoked a great deal. Perhaps the most interesting fact which has come out of the analysis of these cases is that, though centenarians, as a rule, have not suffered much from illness during their long lives, yet a considerable number of instances were met with where even severe illnesses had been recovered from at an advanced age. Indeed, some of these old people seem to take a new lease of life, as the saying is, after passing four-score years, and are not only able to resist fresh attacks of acute disease, but even apparently to throw off some of the effects of chronic maladies from which they had been previously suffering. It is interesting to note that women are in a decided majority in Professor Humphry's list; after making every allowance for their comparative immunity from accident, exposure, and anxiety, and their greater temperance in eating and drinking, there still appears to be reason to believe that woman possesses a greater inherent vitality than man.—*British Medical Journal.*

MEDICINE IN TENNESSEE.—There are in Tennessee according to the "Medical and Surgical Directory of the United States," 2,059 persons claiming to be physicians and engaged in the practice of medicine. Of this number only 965 have diplomas, or any other authority upon which to establish their claims; hence 1,094 are practising without any authority whatever. It is but reasonable to suppose that very many of the latter class are wholly ignorant of even the principles upon which the science is based. This is indeed a bad showing, and it is to be hoped that a better day will ere long dawn upon our profession and the good people of Tennessee.—*Mississippi Valley Medical Monthly.*

TWO NEW REMEDIES FOR ULCERS.—The well-established hemostatic action of solutions of antipyrine prompted Dr. Bosse (*Berliner Klinische Wochenschrift*, 33, 1886) to employ it in a case of varicose ulcer, in which a profuse hemorrhage occurred from an arroded vein. He dusted the surface freely with antipyrine, and put on a compress of absorbent cotton and a bandage. After three days the dressing was changed, and the whole ulceration was found to be covered with healthy granulations. He therefore continued to apply the antipyrine for ten successive days, and thereupon dressed the granulations with a two per cent. ointment of nitrate of silver. The result was that the ulcer, which was as large as the palm of the hand, was healed in about three weeks. Thirty similar cases were treated with equal success. Bosse, therefore, recommends antipyrine as promoting the development of granulations in atonic ulcers and fistulæ. According to Martin, suppositories composed of cocoa-butter and ten grains of antipyrine afforded great relief in hemorrhoids and fissured anus, and may cure. Dr. A. Sydney Reynolds, in the *Medical News*, gives the result of his experience with sub-iodide of bismuth in the treatment of ulceration. Its therapeutic and physical properties may be summed up as follows: (*a*) It subdues the inflammatory process. (*b*) It substitutes the inflammatory regeneration of tissue with a neoplastic force, which closely simulates normal em-

bryonic histo-genesis. (*c*) It is, by its action, *a vital aseptic*. (*d*) It prevents the formation of pus. (*e*) It lessens direct and reflex irritability. (*f*) It is so bland and unirritating that it can be used on any surface. The sub-iodide of bismuth, by virtue of these properties, is almost a specific for ulceration.

Effect of High Altitudes on Heart Disease.—In the September number we gave an extract from a paper by Loomis, giving examples of serious consequences following the ascent of mountains by persons with cardiac affections. To offset this we quote from a private letter received from Dr. W. X. Sudduth, of the Medico-Chirurgical College, who is spending a year in the German laboratories, preparing material for his classes in histology. He writes as follows: "I have done some of the highest passes in Switzerland. I commenced with the Trutt pass (6,000 feet), and led gradually up to the ascension of the Stockhorn (12,000 feet). This latter trip, including the descent to Zermatt, kept me on my feet ten hours and a half. The ascent was over 7,000 feet, and the descent 9,000 feet. Pretty good day's work! Now, I know that this will be considered heroic treatment for a case of mitral stenosis. I have a theory, however, based upon my last year's experience, that it would be beneficial in my case, although such treatment is not laid down in the books. I held that as there were no vegetations in my heart, but only a lessening of the calibre of the valve, a high altitude, which would necessitate the expansion of the lungs would prevent pulmonary congestion, and also that if the continued exercise were not of too violent a character, the whole effect would be beneficial. So it has proven in my case. I have felt less uneasiness in the region of the left auricle than is customary with me. My general health is first-class, and my powers of endurance have not exceeded their present condition at any time in the last ten years."—*Medical World.*

Acute Fatty Degeneration of the Newly-Born.—Buhl, in 1861, described the symptoms and morbid anatomy of a rare disease, occurring in newly-born infants, to which he gave the name of acute fatty degeneration. His observations have since been confirmed by Hecker, Furstenburg, Roloff, and Runge, though it cannot be said that this condition is sufficiently well known for it to take its place as a well-defined and definite disease. The infants suffering from it are generally born in a condition of asphyxia, without obvious cause, and some die asphyxiated. If it survive it mostly suffers from more or less cyanosis, with hemorrhage from the bowels, stomach, or from the navel, on the separation of the cord. There is often jaundice, and blood extravasations take place beneath the skin, conjunctiva, or mucous membrane of the mouth; there may be general œdema; death usually takes place within two weeks. At the *post-mortem* minute hemorrhages are found in the various internal organs, sometimes they are infiltrated with blood; the tissues are bile-stained. On microscopical examination of the tissues of the heart, liver, kidneys, etc., they are found to be in a condition of fatty degeneration. The nature of the disease is quite unknown. It is interesting to note that a similar condition has been noted in newly-born pigs and other domestic animals.—*Providence Medical Journal.*

Winckel's Disease.—A somewhat similar disease as acute fatty degeneration of the newly-born has been described as occurring in an epidemic form by Winckel, and characterized by cyanosis, jaundice, and hæmoglobinuria. This epidemic occurred in the Foundling Hospital, at Dresden, in 1879, where twenty-three infants were affected in the course of a month. The symptoms noted were first of all a bluish tinge on the skin of the face, body, and limbs, with a more or less icteric tint; in some cases there was vomiting and diarrhœa. The urine was of a light-brown color, with a sediment consisting of epithelium and casts; the blood contained an excess of white corpuscles and many granular bodies. The symptoms mostly began on the fourth day after birth, death occurring in one case in nine hours, though the average duration of the disease was about two days. The sections showed a yellow staining of the skin and the internal organs. The spleen was large and hard, and dark red; the kidneys were usually dark brown in color, the microscopic examination showing their tubules to be filled with granular pigment. There were punctiform hemorrhages on the surface of the various internal organs, and fatty degeneration of the liver and heart.—*Providence Medical Journal.*

Linseed Oil in Pruritus.—A correspondent writes us that he has lately witnessed the triumph of linseed oil in the treatment of pruritus ani, and where all the classical remedies had failed. In the case of two patients, who had been for several years sufferers from pruritus ani, with a trifling erythematous eruption and no rectal complications that could be discovered, the free external use of linseed oil, at bed-time, about the parts gave immediate relief, and thus far free inunction with this simple remedy has given complete exemption from the nocturnal annoyance.—*Boston Medical and Surgical Journal.*

The Early Diagnosis of Vertebral Caries.—Dr. George W. Ryan, of Cincinnati, in a paper on this subject read before the Cincinnati Academy of Medicine, expressed himself as surprised that so many excellent observers should regard the knuckle as the first symptom of vertebral caries (*The Medical and Surgical Reporter*, December 11, 1886). Over-estimation of the importance of a diagnosis before the kyphosis is apparent, is impossible. If we believe that we have a constitutional disease, an essentially tuberculous one, beginning generally as a central ostitis of the body of the vertebra, the rational symptoms will be accordingly clear to us. It is now generally understood that this disease can be diagnosed in the incipient stage, and ought to be when the opportunity is presented. There are, however, cases which cannot be made out until the knuckle is visible. The first step is an accurate family history, directed especially to tuberculosis. The next, as to whether the child has passed through the infantile diseases or not, and as to convalescence. A tardy convalescence is often the starting-point of this disease. You will have heard before you ask it of a trauma, real or suspected. Further questioning will give you the history of restless nights, moaning and disturbed sleep, a tired feeling, or a continued desire for support. The child very likely complains of an epigastric pain, if it falls it screams from pain, it walks with care, or if young does not walk at all; that it holds its back very rigidly, or the shoulders thrown back to an abnormal degree, or one shoulder appears higher than the other, that it does not stoop, or if it does it is with great care. Pain in the back is occasionally complained of, and this generally when a jar is sustained. The gait is characteristic, almost pathognomonic. There is a carefulness, a rigidity about the spine which is never found unless there is spinal disease. The physiognomy will give you a pinched and anxious expression. The child can only stoop with the spine held rigid, or from pain gives it up. Physical examination, with all the clothing removed, may not give a trace of the angular curvature. Pressure to ascertain the existence of a soft spot is valueless. The examination as to mobility can be readily and painlessly made by having the child lie on its face and slowly bend the limbs with the opposite hand on the opposite side to the disease. It can thus be determined whether the column yields throughout, or whether there is any point where rigidity is present. If, with all this, rigidity is found, the diagnosis is unmistakable. In the cervical region the symptoms are altogether different. Torticollis is often present, with an occasional occipital or post-auricular neuralgia or hyperæsthesia. Brushing the hair causes pain; there is considerable interference with the act of motion, and the deformity is often slight. The acuteness of perityphlitis and peri-

nephritis would, as a rule, enable us to exclude spinal disease. The flexible spine would also assist. The pressure test, though of some pathological and clinical value, should, on account of its cruelty, be entirely discarded. He had never seen tenderness from pressure over a diseased spine in the incipient stages in but two cases, and in one of these it was probably neuralgic. It is indicative of a periosteal rather than a central lesion. To diagnose the kyphosis of rickets from caries, take into consideration the general rickety appearance of the child. He urged, in closing, the necessity of a physical examination, a clear history of the case, to keep in mind the pathology of the disease; and a diagnosis can readily be made, in the majority of cases, before the kyphosis appears.

WARTS.—It is now fairly established that the common wart, which is so unsightly and often proliferous on the hands and face, can be easily removed by small doses of sulphate magnesia taken internally. M. Colrat, of Lyons, has drawn attention to this extraordinary fact. Several children treated with three-grain doses of Epsom salts, morning and evening, were promptly cured. M. Aubers cites the case of a woman whose face was disfigured by these excrescences, and who was cured in a month by a drachm and a half of magnesia taken daily. Another medical man reports a case of very large warts which disappeared in a fortnight from the daily administration of ten grains of the salts.—*The Medical Press.*

DIAGNOSIS OF OVARIAN TUMORS.—Professor J. S. Wellford, of Richmond, suggests as a valuable adjuvant means of differential diagnosis between pregnancy and ovarian tumors the examination of the phosphatic condition of the urine. In pregnancy, owing to the consumption of the phosphates by the fœtus, there is a very decided diminution of the phosphates in the urine. In the presence of ovarian or other tumors, owing to the strain on the nervous system by the disease, the quantity of the phosphates excreted is very largely increased.—*Practice.*

ICE-WATER ENEMATA are used with success in the Birmingham General Hospital in cases of collapse often seen during diarrhœa in young children. It is claimed that one injection, two or three ounces, is very soon followed by sleep, and that, by the astringent effect on the congested vessels of the intestines, the diarrhœa is diminished. It is further claimed that no depression or other bad effect has resulted.

HYDROCHLORATE of quinine is combined with a smaller quantity of acid, and hydrochloric acid is better suited to the system than sulphuric acid. Hydrochlorate of quinine contains a larger proportion of the alkaloid quinine. While the price is one-third higher than the sulphate, yet its greater efficiency fully compensates for the enhanced value. Hence, says Mr. H. W. Fuller, the muriate of quinine is the best salt to use.

UGLY VACCINATION-SCARS.—A writer in the *Correspondenz-Blatt für Schweizer Aerzte*, No. 18, 1886, who had a good opportunity of studying vaccination-scars at the Basle Federal Athletic Fête (*Turnfest*), draws attention to the æsthetic aspect of the "art of vaccination." Very many of the men had ugly, thick, and broad scars, reaching sometimes down to the elbow. When spoken to about the matter, they expressed indignation at the disfigurement inflicted upon them by the vaccinator. The writer recommends that more attention should in future be paid to this matter, which, though trifling in itself, may sometimes strengthen the hands of anti-vaccinationists. We understand that the practice of vaccinating on the leg is quite common among American physicians, and has much to recommend it.

SUPERNUMERARY FINGERS AMONG NEGROES.—Dr. F. K. Stoekly, of Bluebank, states that supernumerary fingers and toes are found with extraordinary frequency among negro tribes living beyond the Orange Free States. He mentions the case of a Caffre, aged eighteen, who himself had six fingers on each hand; while the same anomaly was present in his father, in his mother, in his four sisters, and in one brother. His mother had also a double series of toes on both feet.

BONE-GRAFTING.—At the French Congress of Surgery M. Poncet expressed the belief that it would be possible to reconstruct a destroyed bone by means of osseous grafts. It is not after cicatrization that the grafting can be expected to succeed; it is at an anterior period, when active healing of the wound is taking place, that the grafting can be made under the most favorable conditions. M. Poncet then cited the case of a child, eleven years of age, from whom a long sequestrum of the tibia had been removed after osteo-myelitis. This sequestrum measured twenty-five centimetres in length. One month after the operation the first attempt at grafting was made. The fragments were taken from a newly born infant which had just died. Antiseptic dressing was used, and the limb was kept at rest with plaster splints. Twelve days later the dressing was changed; there was slight suppuration. New grafts, composed of four bony fragments, were then procured from a young kid. These were implanted in fleshy granulations and only one was eliminated. Six months after the operation there was a solid bony mass, thirty centimetres in length; the child became strong, and able to walk.—*Brit. Med. Journal.*

THE MEGALOSCOPE.—At the French Congress of Surgery, M. Boisseau du Rocher exhibited a megaloscope, invented by himself for the purpose of exploring deep-seated cavities, such as the bladder, intestines, and stomach. By means of this instrument the mucous membrane of the bladder may be examined over an area of twenty-nine centimetres. It is fixed on a stem varying in shape and calibre, adapted to the cavities examined.

THE ART OF WASHING THE HANDS.—In a communication to the Thurgau Medical Society, Dr. E. Haffter, of Trauenfeld, discusses the paramount importance of antisepsis in surgical and obstetrical practice; and, among other things, said that he is the best antiseptic who best understands how to wash his hands, "since the latter are the most common vehicles of infection." The "art of washing hands" is not an easy one, according to the author. To insure absolute surgical cleanliness of the hands they must first be carefully washed with potash soap and water as hot as can be borne, and then with a five-per-cent. solution of carbolic acid, or one-per-mille solution of corrosive sublimate, or chlorine water.—*Brit. Med. Journal.*

ABDOMINAL TUMORS AND THE EXCRETION OF UREA.—At the French Congress of Surgery, M. Thiriar, of Brussels, speaking of the analysis of urine in cases of abdominal surgery, stated that in benign tumors the proportion of urea in urine is always more than twelve grammes, while in malignant tumors there is always hypo-azoturia. In support of this opinion he mentioned several cases in which he was able, by this indication alone, to diagnose a tumor as benign or malignant, which was afterward confirmed by the operation, the necropsy, or the subsequent course of the tumor.—*Brit. Med. Journal.*

SOME STATISTICS OF HERNIA.—Dr. Baxter's tables show that out of 334,321 recruits and substitutes examined by the recruiting officers during the War of the Rebellion, more than 17,000 were rejected on account of hernia. The London Truss Society, during the first twenty-eight years of its existence, issued over 83,000 trusses. Two factories in Philadelphia manufacture and sell from 216,000 to 250,000 per annum.—J. B. HAMILTON, in *Chicago Med. Jour.*

A NORTH CAROLINA HEALTH RESORT.—Tarboro', N. C., is said to be gaining quite a reputation as a resort for consumptives. The local physicians claim that phthisis is unknown in the neighborhood.

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Original Lectures.

MULTIPLE NEURITIS AND ITS RELATION TO CERTAIN PERIPHERAL NEUROSES.[1]

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LECTURE II.

MR. PRESIDENT, LADIES AND GENTLEMEN OF THE PATHOLOGICAL SOCIETY:

IN the last lecture we studied the history of multiple neuritis, and incidentally obtained some clinical pictures of various forms of this disease. We also discussed its pathology and its etiology. This evening we must look more carefully at the symptoms presenting themselves in the different varieties of the affection.

An etiological classification of the cases of multiple neuritis appears to be the one most useful to the clinical observer, and as the forms vary considerably in their symptoms, we shall perhaps arrive at a more definite knowledge of the disease if we consider each of the classes separately. It is possible to distinguish—

1. Toxic cases, due to poisoning by alcohol, arsenic, lead, and bisulphide of carbon.

2. Infectious cases, due to the direct action upon the nervous system of the infectious agents, producing diphtheria, variola, typhoid and typhus fevers, severe malarial fever, and tuberculosis; to which must be added the agent causing the epidemic form of neuritis known as kakke or beriberi.

3. Spontaneous cases, due to uncertain causes, among which cold, and exposure to damp and wet, and to overexertion, may find a place.

I. TOXIC CASES.—(*a*) *Multiple neuritis, due to poisoning by alcohol.* While alcoholic paralysis has been universally recognized for many years, it is only within a short time that the symptoms and pathology have been brought into a logical connection. It is to Moeli,[2] of Berlin, and Dreschfeld,[3] of Manchester, England, that we owe the most important recent contributions to the knowledge of this form of neuritis, though the work of Henry Hun,[4] of Albany, and of Bernhardt,[5] of Berlin, cannot be passed over without recognition.

It will be remembered that among the first cases of multiple neuritis in which an autopsy was made, viz., those of Lancereaux,[6] the disease was traced to alcoholism. Lancereaux deserves the credit of demonstrating the pathological basis of alcoholic paralysis, for the descriptions of its symptoms previously given by Jackson and Huss were not accompanied by post-mortem records. But Lancereaux's observations were for many years overlooked by physicians outside of France; and in England, where the disease is well known, it was ascribed, as lately as in 1883, to a spinal lesion.[7] But in 1884 Dreschfeld combated this theory and called attention to its true pathology, showing that cases formerly supposed to be spinal paralysis were really due to an affection of the peripheral nerves.

All observers have emphasized the fact already noted by Jackson, that the disease is especially frequent among females. Males are not, of course, exempt from alcoholic paralysis, but in them the poison seems more liable to manifest itself by acute cerebral symptoms than by those of disease of the peripheral nerves. It is especially frequent among those persons in the higher classes whose nervous organism is highly developed, and who lead a comparatively inactive life. It seems not at all improbable that sedentary habits predispose an alcoholic drinker to this disease, and hence active workers, male or female, though taking an equally large amount of liquor as the luxurious drinker, escape. All alcoholic drinks are not equally prone to produce paralysis. It is the spirituous liquors—brandy, whiskey, gin, and rum, and the liqueurs, absinthe, vermouth, etc.—which are dangerous. And it is only after these drinks have been consumed in large amounts and for a considerable length of time that neuritis develops. Its onset, though often apparently very sudden, is usually gradual. For months the patient has suffered from chronic gastritis, insomnia, general neuralgic pains, or severe pains in the joints or limbs, and from tremor and a certain feebleness in movement, when all at once her legs give way beneath her, and after the sudden fall she finds herself unable to rise. Thus a patient of my own, after a year of such premonitory symptoms, was seized with paralysis quite unexpectedly when getting out of bed in the night. This paralysis soon becomes complete in the feet and legs below the knees, and may advance up the thigh. It next attacks the hands and forearms, and while in all extremities it is often greater in the extensors than in the flexors, in some cases both groups of muscles become entirely helpless. This has been the case in three patients under my care. The paralyzed muscles are flabby and soon become atrophied, they have no excitability to mechanical irritation, and the tendon reflexes are lost. They fail to react to a faradic current in the majority of cases, though occasionally a very strong current may produce a response. When galvanism is applied the reaction of degeneration is found to be present. No stimulus can be given to the muscle by sending a current through its nerve, and the positive pole produces more marked contractions with an equal current than the negative pole when placed on the muscle, and then it is only a slow or vermiform movement, not the quick jerk of health. It is also found that strong galvanic currents have to be used to produce any contraction at all. The paralysis of the muscles may advance rapidly in severe cases, involving the motor cranial nerves, the muscles of the trunk, and lastly the diaphragm, thus causing death. More frequently, however, it is arrested when only the distal parts of the extremities are involved, and then it gradually subsides until recovery is complete. The position assumed by the paralyzed limbs has been thought to be almost characteristic. There is dropped wrist quite similar to that seen in lead-palsy, and also dropped foot, due to the falling forward of the foot from its own weight, since the anterior tibial muscles are weak. This deformity is increased by the fact that the patients lie in a recumbent posture with the feet extended; and when the flexors of the toes are but slightly affected, as sometimes is the case, their unopposed contraction serves to exaggerate the malposition. If there is entire paraplegia the legs

[1] The Middleton Goldsmith Lectures, delivered under the direction of the New York Pathological Society, January 25 and 28, 1887.
[2] Moeli: Charité Annalen, 1884. [3] Brain, Nos. 26 and 32.
[4] Amer. Jour. Med. Sci., April, 1885. [5] Zeitsch. f. Klin. Med., 1886.
[6] Gaz. Hebdom., 1881. [7] Wilks: Dis. of Nerv. System, p. 272.

and thighs may both be extremely flexed, so that the heels touch the buttocks, but this is exceptional. While the dropped wrist is the usual deformity of the hands, cases are recorded in which the paralysis was limited to single muscles and to muscles supplied by single nerves. Thus Lilienfeld describes a weakness of the extensors of the thumb, fourth and fifth fingers, and Leudet mentions a paralysis of the ulnar nerve. In one case of my own the *main en griffe* was the deformity noticed, indicating a weakness of the interossei only. Such cases as those of Hun,[1] where a facial paralysis was seen, or of Lilienfeld,[2] where double abducens paralysis occurred, are certainly rare, and still more so are those in which irregular, rapid pulse has been ascribed to an affection of the pneumogastric.

To the physician these motor symptoms, and the œdema, occasional lividity, profuse sweating, and glossy skin, so often associated with them, are very noticeable. But the patient suffers far more from the disturbances of sensation. In the description of Jackson, the pains were graphically portrayed. They are the cause of terrible agony, sufficient to produce insomnia, and wearing seriously upon the endurance of the sufferer.

In addition to pain, hyperæsthesia is not infrequently observed. It is usually quite extensive in the legs, though in cases of poisoning by absinthe it has been limited to the soles of the feet. The muscles, as well as the skin, are sensitive to handling and to pressure, and marked tenderness in the course of the nerves is always elicited by examination. In one of my cases soon after the onset, the patient could not bear to be touched or moved, though perfectly unable to help herself. Charcot goes so far as to say that muscular sensitiveness associated with flaccid paralysis is pathognomonic of alcoholism.

Paræsthesiæ are always complained of. Numbness, tingling, and formication are frequent. In one of my patients the sensation was as if heavy bracelets were around the wrists, and as if very tight drawers were on the legs. At other times she felt as if the limbs were swollen and as if the skin were about to burst. Such sensations may cease as the case increases in severity, and give place to a total lack of sensation in the parts. They return, however, with advancing recovery, and are among the last symptoms to disappear.

Abolition of tactile sense, and to some degree of muscular sense, is the rule after the paralysis is developed. Temperature-sense and the perception of pain are never wholly lost, but may be delayed in transmission. The anæsthesia may be limited to irregular areas, and may be only in the cutaneous distribution of one nerve, but is usually found over the entire distal part of the paralyzed limb. Usually the cutaneous reflexes are preserved. The loss of muscular sense is, in some cases, so marked a symptom, and one of such early occurrence, that Dreschfeld distinguishes a class of cases which he terms ataxic rather than paralytic. And this distinction is perfectly justifiable, for in many cases it is the inco-ordination which attracts the attention of both the patient and the physician. It is this class of alcoholic cases which may be mistaken for locomotor ataxia, and which have been named by French writers pseudo-tabes alcoholique.[3] But ataxia is not exclusively limited to this class of cases. It may be present in some degree in cases of paralysis, and during recovery from paralysis the deficiency in co-ordinating power may become evident, and appear to retard the progress of the case. Nor are the cases of ataxia, on the other hand, free from paralysis.

And this fact is proven by the observations of Westphal[4] and Charcot. For, by contrasting the walk of a true ataxic patient with that of an ataxic alcoholic patient, they have each discovered several points of difference. The ataxic patient throws the foot forward with undue violence, the toe lifted high in air, and brings first the heel down forcibly and then the entire foot. The alcoholic, however, has some weakness in the muscles of extension and cannot raise the toe. He therefore lifts the foot high in order to step over the hanging toe and not to trip on it, but the motion is made without undue force. He then throws the foot forward in order to throw the toes up and get them out of the way as he brings the foot down to the floor. The motion is awkward and has an appearance of one stepping over high obstacles, but it is a voluntary attempt to remedy a deficient power—not the involuntary awkwardness of a man unable to manage strong muscles. There may be in both patients some tottering, and swaying when standing with the eyes closed, the so-called Romberg symptom, is common to both locomotor ataxia and alcoholic neuritis. Dejerine describes the following case, in which the symptoms resembled those of tabes.

Observation VIII.—Male, forty-two, a hard drinker, complained for four months of shooting pains in the legs, and noticed a gradually increasing difficulty in walking, which was worse in the dark. He had also found his feet swollen at times, and had some difficulty in micturition. Examination on admission to the hospital showed a high grade of ataxia in walking, Romberg's symptom, loss of tendon reflexes, anæsthesia almost total of entire body, considerable analgesia with retardation of sensations of pain, temperature-sense being preserved, and loss of muscular sense in the legs. The muscles were slightly feeble and a little diminished in size. It could hardly be said that there was paralysis or atrophy. The diagnosis made was locomotor ataxia of an unusual type. The onset was so rapid, the anæsthesia so extensive and severe, the paresis of the limbs, though slight, so evident, that it differed from a typical tabes. But no other diagnosis could be made from the symptoms. The patient died of chronic nephritis six weeks after admission. The autopsy showed the spinal cord to be normal. But in the cutaneous and to a less degree in the intra-muscular branches of the nerves, as well as in the distal parts of the nerve-trunks, a high grade of parenchymatous neuritis was found. The nerve-tubes had lost their double contour, the myelin sheath was segmented, the protoplasm was increased, the nuclei multiplied. The nerve-trunks on the plexuses and the nerve-roots were normal. The nerves of the legs were more deeply involved than those of the arms.[1]

The second case, in a female forty-nine years of age, presented almost identical symptoms and lesions.

The special senses are occasionally affected in cases of alcoholic paralysis. Amblyopia has been observed, and also defective vision from central scotoma. The field of color-vision is often contracted, even when sight is preserved. There may develop a true optic neuritis, evident to the ophthalmoscope, and this may go on to optic-nerve atrophy.[2] Inequality of the pupils is frequently seen, as is also a moderate contraction of the pupil. All these eye symptoms, occurring as they may in a case of the ataxic variety, make a differential diagnosis from locomotor ataxia difficult. The Argyle Robertson pupil (which contracts in accommodation but not to light) has not been seen in alcoholic cases, while it is an early symptom of tabes.

One feature of alcoholic paralysis remains to be noticed, viz., the cerebral symptoms. These are hardly ever wanting. There is at first the excitement rising to the degree of active delirium, with illusions and hallucinations of the various senses; there is the insomnia which so soon exhausts the patient if it is not remedied; there is the loss of memory, especially of recent occurrences; and the lack of power of attention or concentration which prevents intelligent conversation. The indifference to

[1] Hun: Loc. cit.
[2] Lilienfeld: Berl. Gesellsch. f. Psych. und Nervenkrankheiten, July 15, 1885; see also Richard Schultz, Neurol. Centralbl., Nos. 19, 20, 21, 1885.
[3] Dejerine: Arch. de Phys., 1884.
[4] Westphal: Ueber eine bei chronischen Alcoholisten beobachtete Form von Gehstörungen, Charité Annalen, 1879. Charcot: Leçons, Progrès Médicale, 1886.

[1] Dejerine: Arch. de Phys. Normale, 1884. For other ataxic cases, see Dreschfeld, loc. cit.
[2] Brissaud: Des paralysies toxiques, p. 31. Paris, 1886.

bodily wants may be so great as to lead to uncleanliness, and since paralysis of the sphincter is the rare exception, incontinence is usually to be ascribed to the mental state. It is useless to attempt to get any reliable history of their illness from these patients. Their statements are unintelligible or unreliable. And here it may be well to notice a symptom first remarked by Strümpell.[1] These patients will relate occurrences as having happened recently with much elaboration of detail, when as a fact the story is entirely a product of their imagination. Thus one patient of my own, who had been confined to bed for many days, told me one afternoon that she had been out to see an eminent gynecologist during the morning; had gone to his office and waited for him several hours; had seen other patients there, and finally had been told by the doctor's brother that he would not return in time to see her, so she had come home again. And this was all related in apparent good faith, so that I have no doubt that she believed that what she said had occurred. With the possibility of such delusions in view, it is evident that the statements of these patients cannot be accepted regarding anything, especially as to their own history.

One patient, who was admitted to Bellevue Hospital during my service there, told me a different history of her case every day for a week, and it was only by interviewing her friends that the correct account was obtained.

The course of alcoholic neuritis is quite uniform. After a sudden onset the symptoms rapidly advance to a high degree, which is reached in a week or two from the beginning of the paralysis or ataxia. Then they may increase further, and cause death by respiratory paralysis. Usually they remain stationary for a time, and then gradually subside, the entire duration being from two months to a year. Individual muscles regain their power, tone, firmness, and electrical reaction slowly, and during recovery the tingling and numbness in hands and feet may be severe. In a few cases the muscles become contractured, and permanent deformities, only to be overcome by long-continued massage or by operative measures, develop. When the fact is considered that those who recover rapidly rarely fail to resort again at once to the use of stimulants, and thus expose themselves to the danger of a relapse, the ultimate fate of the chronic cases is hardly more serious than that of those who get well.

As examples of the paralytic form the following cases are cited:

Observation IX.—A baker, aged forty-seven, phthisical, a moderate drinker, had suffered for several years from numbness of the hands and legs; and for a year before the acute invasion of his illness from a slight weakness of the legs and uncertainty of motion in walking. This weakness became much worse during the spring of 1881, so that all summer he was confined to his room, though he managed to walk a little. In November, after an uneasy night, during which he was delirious, it was found that he could not move his legs at all, and that his arms were powerless. He was brought to the hospital November 25th, when a total paralysis, with atrophy and loss of tendon reflexes, was discovered in legs and arms, as well as slight disturbances of sensibility in the legs, consisting of a delayed sensation of pain. His mental condition was a weak one, but he answered questions rationally. The face was in no way affected. No involuntary evacuations. Electric examination showed a great diminution, and in many muscles total loss, of faradic excitability when the current was applied both to nerve and to muscle. With the galvanic current few contractions could be elicited by exciting the nerves, and by exciting the muscles the slow contractions characteristic of RD,[2] as well as the predominance of AnCC over KCC were present. The mechanical excitability of the muscles was not impaired. There were no pains. During the following three months there was little change in the condition, except that his mind was not clear, and that he told extraordinary stories of having been out walking, of having made purchases, etc., when, in fact, he could not move from the bed.

His pulse became more rapid during this time, averaging 120 per minute. In February, 1882, the legs had become œdematous, and there was marked analgesia in them, except on the soles of the feet, which were hyperalgesic; sensations of touch were, however, readily perceived. Though he had a sanguineous dysentery, there was no incontinence. On the 12th there developed suddenly great difficulty in respiration, due to suspension of all diaphragmatic breathing, and the next day he died. An ophthalmoscopic examination on the last day showed an atrophy of both optic nerves on the outer side of the eyes.

Autopsy: Brain and cord normal. No macroscopic changes in the nerves. A microscopic examination, however, showed the presence of a very high degree of degeneration and degenerative atrophy in the nerve-fibres. The myelin had divided in large and small drops, containing fat-granules; the degenerated mass within the Schwann sheath, consisting of myelin and axis-cylinder, was seen in various stages of absorption, and in spots the empty Schwann sheath alone remained. No inflammatory exudation was present, and the endoneurium and perineurium appeared to be normal. The muscles showed evidence of degenerative atrophy. The anterior nerve-roots were normal.[1]

The lesion here resembled exactly that in Joffroy's case, already cited. It was similar in the following case:

Observation X.—Female, who had recently indulged in alcoholic excesses and had suffered from gastritis and delirium tremens; complained for some days of pain in her legs and numbness in hands and forearms. When seen by Dr. Webber the pains in the limbs were severe, and she could not turn in bed without help, her knees were drawn up, and attempts to straighten them caused pain. There was loss of power in extensors of the wrist and hands, and the fingers could not be shut perfectly. There was general tenderness over the muscles of the extremities, and pressure along the nerves was very painful. Her throat was sore, but she did not have diphtheria. She spoke in a whisper and with difficulty. Three days later anæsthesia of the feet and hands appeared, and the tendon reflexes were lost. The pain became so severe that morphine was given to control it. The paralysis became more complete, the anæsthesia increased, incontinence of urine and fæces developed, she appeared to be very feeble, and respiration became wholly thoracic. Seventeen days after admission to the hospital she died.

Autopsy showed brain and cord normal. The chief nerve-trunks of the extremities, and the phrenic and pneumogastric, were in a condition of degeneration, the distal ends being affected to a greater degree than the central portions. "The simplest change found was in the medullary sheath at Ranvier's constrictions, without break in the axis-cylinder, and without increase of nuclei." In some nerves extensive degeneration was found, the medullary sheath being broken up into fatty fragments, the axis-cylinder discontinuous or destroyed, and the number of nuclei increased. In the fibres which were most altered was found an increase of nuclei; and apparently small masses of protoplasm, not nuclei, were tinted in the midst of the granular débris. Nearer the root of the nerves axis-cylinders were more numerous. In the sciatic the sections from the highest part of the nerve, which had been preserved, were still diseased in a small proportion of their fibres.[2]

A very similar case, with the same changes in the nerves, is recorded by Müller.[3]

[1] Strümpell: Arch. f. Psych., 1883, xiv., 339.
[2] RD = reaction of degeneration; AnCC = anode closure contraction; KCC = cathode closure contraction.

[1] Strümpell: Arch. f. Psych., 1883, xiv., 2.
[2] S. G. Webber: Arch. of Med., 1884, xii., 33-49.
[3] F. C. Müller: Arch. f. Psych., 1883, xiv., 3.

The following case, under my own care, terminated favorably:

Observation XI.—Male, aged thirty-six, a hard drinker, after an attack of gastritis became paralyzed suddenly in both legs. A few days after this, both hands became useless, so that he was completely helpless. His wife says that his memory is quite gone. On admission to Bellevue Hospital, September, 1880, seven weeks after the onset, he complained of pain in all four extremities, and of tenderness in the muscles and joints when these were handled. The upper extremities were almost totally paralyzed below the elbows, the only motion possible being a slight flexion of the fingers. There was wrist-drop on both sides. The lower extremities were totally paralyzed below the knee, and the feet hung down motionless. The muscles of the thighs were also affected, for although he could pull his legs up in bed, it was with great difficulty that they could be straightened out. All the paralyzed muscles were atrophied, and the faradic reaction was lost in the extensors and greatly diminished in the flexors. The galvanic reaction was not tested by me from lack of apparatus. Tactile sense was considerably impaired, but the senses of pain and temperature and muscular sense seemed to be natural. The knee-jerks were lost. When an attempt was made to have him stand, the feet were pushed out and the knees doubled under him at once. Fibrillary twitchings were very noticeable in the atrophied muscles, and a marked tremor of the tongue was seen. The facial and ocular muscles were not affected, and the special senses were normal. There was no incontinence of urine and no symptom of thoracic or visceral disease. His mind was much impaired. He talked in a rambling manner, laughed much, could not fix his attention, and his memory was so poor that no reliance could be put in his statements. Under treatment by iodide of potash, and complete cutting off of all stimulants, he began at once to improve. In two months from the time of admission he was able to walk, and one month later he was discharged perfectly well.

These cases are sufficient to present a clinical picture of the symptoms and course of the forms of alcoholic multiple neuritis. The differential diagnosis, elements of prognosis, and means of treatment will be considered when other classes of the disease have been studied.

(*b*) *Multiple neuritis due to poisoning by arsenic.*[1]—It has long been known that an occasional result of arsenical poisoning is the development of paralysis, but it is only within the past four years that the fact has been determined that the symptoms in these cases are due to an affection of the peripheral nerves. Had the fact of the peripheral origin of alcoholic paralysis not been already proven, it is probable that the theory so long in vogue, that arsenical nervous symptoms were due to spinal lesions, would still prevail. But there is such a similarity between the two sets of cases, that it is impossible to ascribe them to other than the same pathological condition. Autopsies in support of the position that the peripheral nerves are involved are few in number, but in several cases the lesion has been found. The observations on record of spinal lesions are, it is true, more numerous; but when these are compared it is found that different lesions have been discovered in different cases, so that there is no single pathological change in the spinal cord which is constantly produced by arsenic. Further, some of the changes described in experimental cases in animals (viz., vacuolization of cells) are due to imperfect hardening of the specimens. It must, therefore, be admitted that multiple neuritis may be due to arsenical poisoning.

The changes produced in the nerves are so exactly similar to those already described, that there is no need of a recital of the pathological process.

The nervous symptoms produced by arsenic have been thought to vary somewhat, according as the ingestion of the poison has been a sudden or a gradual one. Brissaud claims that if there is slow poisoning, as, for example, by the long-continued use of Fowler's solution, paralysis is rather the exception, and is not severe, it is diffuse and transient; while other symptoms, such as gastro-enteritis, trembling, delirium, and aphasia attract the chief notice. If there is acute poisoning from an overdose of arsenic, he holds, on the other hand, that paralysis ensues either during the period of active symptoms of poisoning, or soon after. The observations of other equally careful authors do not entirely support this view of Brissaud; for in two cases of Dana, one of acute, the other of chronic poisoning, very similar symptoms of paralysis and ataxia developed.

The description which has been given of alcoholic paralysis might almost be repeated for arsenical paralysis. There is the same limitation of the affection to the muscles of the distal parts of the extremities, the extensors being chiefly affected, and the weak muscles are flaccid, soft, and atrophied. There is a partial reaction of degeneration. The tendon reflexes are abolished; skin reflexes are preserved. There is often a marked tremor. The paralysis may begin either in the feet or in the hands, is usually bilateral, but has been in four cases of the hemiplegic type. The same dropped wrist and dropped foot are seen as in alcoholic cases. Disturbances of sensibility are prominent symptoms; burning, tearing, shooting pains; formication, tingling, muscular, and arthritic pains and tenderness are associated with hyperæsthesia, and this may be followed by irregular patches of anæsthesia. The muscular sense is usually impaired, and so much so in some cases that an attempt has been made to establish a distinct class of cases as arsenical ataxia, or pseudo-tabes arsenicale. In these cases the inco-ordination of hands and feet, Romberg's symptom, and an awkward gait are very noticeable, so that tabes may be suspected until the history makes the causation evident. In a case of Dana's the patient could not tell the position of his limbs or distinguish between weights differing one to forty. In Scolozouboff's case the walk resembled that described by Westphal in alcoholic tabes, and was easily distinguished from a real ataxic gait. Seeligmüller and Dana, however, affirm that the gait in their cases was like that of locomotor ataxia. Occasionally œdema of the extremities, cyanosis, unusual sweating, and extensive desquamation indicate an implication of vaso-motor and trophic nerve-fibres. In the most severe cases contractures in a flexed position developed in the paralyzed limbs. The sphincters are never involved. The duration of arsenical paralysis is somewhat greater than that of ataxia. Either condition may last several months, but occasionally the recovery is complete in a few weeks. Frequently, after the power has returned, the patient suffers for months from numbness and tingling in the extremities, which is sufficient, as in a case under my own observation, to interfere with the finer motions, to disturb the sleep and cause constant discomfort. According to Gerhardt's statement (cited by Dana), ninety-seven per cent. recover wholly.

(*c*) *Multiple neuritis due to poisoning by lead.*—It is not my purpose to enter upon any description of the various forms of lead palsy, which are familiar to every practitioner. Nor is this the proper place for a discussion regarding the various theories of the pathology of the disease. It is only necessary to call attention to the fact that there are now on record a number of autopsies in cases of lead paralysis in which the lesion has been found in the peripheral nerves. In a recently published case of Schultze[1] there was found a very marked atrophy and disappearance of nerve-fibres in the trunk of the

[1] Scolozouboff: Arch. de Phys., 1884, p. 323; Imbert Gourbeyer: Des Suites de l'empoisonnement arsenical, Paris, 1881; Seeligmüller: Deut. Med. Woch., 1881, p. 185; Lancereaux: Gaz. Hebdom., 1881, p. 719; Jaeschke: Thèse Breslau, 1882, Ueber Lähmung nach acuterar senik Vergiftung; Levin: Schmidt's Jahrbuch, Bd. 165, p. 239; Da Costa: Phil. Med. Times, 1881, p. 385; C. L. Dana: Brain, January, 1887; Brissaud: Paralysies toxiques, Paris, 1886.

[1] F. Schultze: Ueber Bleilähmung, Arch. f. Psych., xvi., p. 791.

musculo-spiral nerve, below the point where the branch to the supinator longus was given off. This decreased in intensity centrally, so that at the brachial plexus no anomaly was found. It increased in intensity toward the termination of the nerve in the muscles. The spinal cord was normal. This is simply a type of a number of recently published cases. On the other hand, there are numerous cases of this disease in which decided spinal lesions have been found—so numerous that many writers always ascribe the disease to destruction of certain groups of cells in the anterior cornua of the spinal cord. It must be admitted, therefore, that in lead we have a poison which, under certain circumstances, affects the spinal cord, and under other circumstances produces neuritis. It may be claimed that the same is true of alcohol and arsenic, and in showing that these poisons can cause neuritis there is no intention of defending the position that they never affect the central nervous system. But it is important to notice that the central organs are rarely involved. The limitation of the neuritis in lead palsy to the motor nerves makes the clinical picture in some cases resemble closely that of spinal disease. In illustration of this the following case is cited:

Observation XII.—A male, aged thirty-six, by occupation a dyer, had suffered from numerous attacks of lead colic, followed by general muscular weakness, which on one or two occasions was so great as to be a general paralysis rather than a simple weakness, and had finally developed a paralysis of the extensors of arms and legs, when admitted to the hospital, where he spent the last three years of his life. During this time his paralysis varied somewhat in degree, but was never entirely recovered from. The muscles affected were the extensors of arms and legs. These were much atrophied, and showed a loss of faradic reaction, and a characteristic change in the galvanic reaction, the anode producing stronger contractions than the cathode, and all contractions being slow. There was also a considerable degree of œdema in the extremities, especially in the legs. Spasms in the unparalyzed flexors occurred on one occasion for one day. The patient suffered also from the symptoms of cardiac disease and phthisis, to which he finally succumbed.

The autopsy showed no changes in the brain or spinal cord. The muscular branches of the peripheral nerves, although presenting no macroscopic changes, were found in a state of extreme degeneration when examined microscopically. Side by side with normal fibres were to be seen fibres, unstained by osmic acid, wholly destitute of myelin sheath. There was no fatty degeneration. Between the fibres a thick, finely fibrillary connective tissue, with small cells, was found. Transverse sections of the nerve-trunks showed a large number of small fibres scattered among the normal fibres, but not collected into bundles, and it was often difficult to distinguish naked axis-cylinders from connective-tissue fibres. The lesion was an increase in the connective tissue of the endoneurium with simple atrophy of the nerve-fibres of different grades.[1]

But in a certain proportion of the cases of lead palsy there are marked sensory disturbances, consisting of severe pains, and anæsthesia, with numbness. In these it is possible, especially if tenderness along the nerves and in the muscles is present, to make the diagnosis of multiple neuritis. The history of the following case, under my care, coincides so closely with that of other toxic cases of neuritis that the diagnosis could not be mistaken.

Observation XIII.—Male, aged thirty-eight, after suffering from an attack of lead colic, began to feel numbness and pain in his legs and feet, which soon extended to his hands and forearms. This steadily increased for two weeks, and to it was added paralysis of the extensors of both hands and both feet, so that at the end of that time he was unable to use his hands or to stand. With the paralysis there was a rapid atrophy of the muscles, and a decline in the faradic excitability. The muscles became more and more tender, and the spontaneous pains gradually increased until it was necessary to use opium freely to quiet them. By the end of a month a well-marked anæsthesia had developed below the knees, and it was noticed that the atrophied muscles were in a constant tremor. There was wrist-drop and foot-drop on both sides, and all reaction to faradism ceased. It required a very strong galvanic current to produce contraction, and ACC was greater that KCC. The knee-jerk was preserved. The muscular sense was impaired. For five months his condition remained stationary, in spite of treatment by strychnia, iodide of potash, massage, and electricity. Then a gradual improvement set in, the pains became less severe, sensation returned, the muscles regained their contour and strength, and finally the electric contractility returned to the normal standard. About a year from the onset of the symptoms, the recovery was complete.

(*d*) *Multiple neuritis from poisoning by sulphide of carbon*[1] *and from illuminating gas* has been suspected, and the similarity of the symptoms in such cases to those already described is quite remarkable. But as there are no autopsies to substantiate the theory, this cause is merely mentioned.

II. Multiple Neuritis consequent upon Infectious Diseases.—There are a number of infectious diseases which are especially liable to be followed by the development of nervous symptoms. These are diphtheria, variola, typhoid, typhus, and scarlet fever, malarial fever, and tuberculosis. The nervous affection usually appears shortly after the period of convalescence in the acute fever. The disease may consist of a simple paralysis of the muscles in the region of distribution of a single nerve. It may affect several nerves on both sides of the body symmetrically. It may even paralyze two or more limbs. It occasionally produces sensory as well as motor symptoms in a single nerve-trunk. It may even cause a general sensory and motor paralysis of as widespread and complex a kind as that produced by chronic alcoholism. Sometimes the symptoms are chiefly of a sensory kind, and consist exclusively of pains, numbness, and anæsthesia, or hyperæsthesia, in the legs, or of a loss of the muscular sense, in which case a true ataxia is the most noticeable symptom. Thus it is evident that the poison of an infectious disease may act as powerfully upon the nervous system as any other form of poison known.

It is only since the clinical pictures presented by multiple neuritis have been recognized that a question has arisen as to the part of the nervous system affected in these cases. Formerly all such phenomena were referred to central lesions; and undoubtedly in many cases this was justified, since autopsies are not wanting to prove that anterior poliomyelitis, diffuse myelitis, and hemorrhages into the cord and brain may follow the acute fevers. There are, however, many conditions which do not correspond to the types of disease produced by central lesions and which recover with a rapidity impossible were the brain or spinal cord involved. It was these cases which raised the question of some possible affection of the peripheral nerves. And careful investigation has been rewarded by the actual discovery of lesions in them.[2]

(*a*) Diphtheritic paralysis is probably more common than any other of these forms of neuritis. As is well known, it is usually the soft palate to which the paralysis is limited, and as a result difficulty in swallowing and in speech are the most prominent symptoms. Bernhardt has found[3] that in the large majority of cases of this kind there is a loss of the patella tendon reflex, but whether this indicates any general affection of the peripheral nerves he does not venture to state. The limitation of the

[1] Eisenlohr: Deut. Arch. f. klin. Med., 1880, xxvi., p. 543.

[1] Ross: Medical Chronicle, January, 1887.

[2] Pitres et Vaillard: Rev. de Médecine, 1885, p. 986; 1886, p. 193 et p. 574, Des Névrites Périphériques chez les typhoides, les tuberculeux et les tabétiques; also, Arch. de Neurol., 1886, p. 337, De la névrite segmentaire.

[3] Virch. Archiv, 1885, Bd. 99, s. 393.

paralysis to the palate has been explained by supposing that the poison of the disease has a direct action upon the terminal filaments of the nerves, which in this position are, as it were, dipped constantly in the poison. This theory is supported by a case in which paralysis of the abdominal muscles was associated with diphtheritic inflammation of the navel in a new-born child. But the more serious cases prove that through the blood the poison may be carried to nerves far removed from the seat of the diphtheritic inflammation.

And the following cases demonstrate the wide-spread symptoms which such general poisoning can produce, as well as the nature of the lesion.

Observation XIV.—Marie S——, aged thirteen, after suffering for a few days from a slight sore throat, found herself unable to see clearly because of the development of a paresis of accommodation. There followed a slowly progressing ataxia of the upper, and later of the lower, limbs, with uncertain gait, disturbance of touch, pain, temperature, and muscular senses, with delayed sensation of pain and loss of tendon reflexes. At first she felt shooting pains in the limbs, but later these ceased. There was at no time tenderness of the nerves to pressure. After three months bulbar symptoms appeared, atrophy, with paresis of the tongue, difficulty in swallowing, spasms of coughing, weakness of voice, and paralysis of the palate. The muscles of the hands began to atrophy about the time that the bulbar symptoms commenced, and soon were useless. In the atrophic muscles the faradic reaction was absent, the galvanic much reduced, and very slow. Nine months after the onset she died of pneumonia.

The autopsy showed the brain and spinal cord to be normal. In all the peripheral nerves of the extremities, as well as as in the hypoglossal and recurrent laryngeal nerves, well-marked atrophic degeneration was found, with destruction of axis-cylinders and medullary sheaths, and with thickening and increase of nuclei in the connective-tissue sheaths.[1]

Observation XV.—Male, aged seventeen, after an attack of diphtheria grew gradually weaker and weaker, developed paralysis of the uvula and paralysis, with some atrophy, in the muscles of all the limbs, and a slight paralysis of the face and tongue. There was no real ataxia, the muscular sense being normal, but the weakness of the muscles interfered with all accurate movement and caused trembling. The eyes were not affected. There was a slight decrease of tactile sense all over, but pain-sense was slow and imperfect. The reflexes were lost, electric reaction was normal in all muscles except the palate, in which RD was found. The sphincters were unaffected. The paralysis involved the respiratory muscles three weeks after the onset of the disease, and caused his death.

The autopsy showed extensive parenchymatous neuritis in all the peripheral nerves. The various stages of degeneration were found side by side in many nerves, and all degrees of degeneration were discovered. The nerves of the extremities, as well as the phrenics, showed these changes. Some nerve-fibres had simply lost their myelin sheath, others were reduced to a series of granular corpuscles; others consisted only of the empty Schwann sheath, whose nuclei were numerous. In many nerves the lesion only involved a few segments, and was not continuous through the entire length. At places circumscribed thickening of the endoneurium produced nodular appearances in the course of the degenerated nerve. Here congestion and emigration of leucocytes were found. The perineurium was unaffected. In almost all the muscles of the extremities and trunk such degenerated nerve-fibres were found. The cutaneous nerves were similarly affected, but to a less degree. The nerve-trunks were but slightly affected, as were also the nerve-roots. The spinal ganglia and cord were normal.[2] The limitation of the degeneration to single segments has also been noticed by Gombault and by Pitres et Vaillard.[1]

Observation XVI.—A boy, aged eight, developed paralysis of the soft palate one week after an attack of diphtheria. This continued for one month, when there suddenly appeared a weakness of all the extremities, and some disturbance of sight. Examination of the eyes showed a complete paralysis of all the recti muscles, with double ptosis, the accommodation and pupil reactions being preserved. The right side of the face was paretic. There was a very marked ataxia in all the limbs. It was with difficulty that he could carry food to his mouth, and he walked with much staggering, and with legs wide apart. Power and nutrition of the muscles was normal, and there was no change in their electric contractility. The tendon reflexes were absent, but the skin reflexes were preserved; and there was no disturbance of sensation or of bladder and rectal functions. The symptoms all increased for ten days, and then respiratory paralysis caused his death.

It was possible to examine the brain only. The small vessels and capillaries were engorged, and the perivascular spaces full of emigrated corpuscles, while here and there small capillary hemorrhages were found. The vessel-walls were not affected, and there were no thrombi discovered. The nuclei of the cranial nerves showed no changes. Both oculo-motor nerves were the seat of very great changes. The myelin sheath of individual nerve-fibres absorbed the carmine stain. In many fibres no axis-cylinder was to be seen. In others the cylinders were swollen or atrophied, presenting variations in size. The number of nuclei of the endoneurium was greatly increased, and among them large granular corpuscles were discovered.[3] The lesion, therefore, which had caused the ocular paralysis was a diffuse neuritis.

A similar affection of the ocular muscles, associated with general weakness, has been reported by Utthoff,[2] which developed two weeks after an attack of diphtheria in a boy, ten years of age, and who at the end of three months had completely recovered. In this case all reaction of the pupils in accommodation was lost, but the light reflex remained. The eye symptoms were attended by some paresis, especially in the legs below the knees—but the muscles were not atrophied, nor was their electric contractility altered. There was a very marked tenderness along the course of all the nerve-trunks. After recovery was complete the knee-jerk returned.

I have seen a case which resembled this quite closely, and inasmuch as paralysis of all the ocular muscles appears to be a rather rare affection, the case may be worthy of mention here.

Observation XVII.—A boy, aged thirteen, after an attack of diphtheria developed paralysis of the soft palate. One week after the paralysis of the palate he noticed a disturbance of vision, which proved on examination to be due to a total paralysis of all the muscles of the eyeballs. The pupil reflex to light was preserved; but as he could not converge the eyes there was no reaction in accommodation. This paralysis of the eyeballs came on within twenty-four hours, and at the same time he developed a very marked degree of ataxia. He swayed in standing with eyes closed, and his gait was exactly like that of a well-marked case of tabes. The motion of the hands was also disturbed, and all the tests demonstrated an extreme degree of inco-ordination. The knee-jerks were lost; the skin reflexes were present. In addition to the ataxia there was actual weakness of the muscles, which was more evident in the arms and hands than in the lower extremities. He had formication in the legs, but not in the hands, and there were no lightning pains. He had great difficulty in swallowing solids as well as liquids, which seemed to point to some involvement of the muscles of deglutition as well as of the soft palate. This condition

[1] Kast.: Deut. Arch. f. Klin Med., 1886 Bd. xl., s. 41.
[2] P. Mayer: Virch. Arch. 1881, Bd., 85, s. 181-226.

[1] Arch. de Neurol., xi.
[2] Mendel: Neurol. Centralbl., 1885, p. 128.
[3] Neurol. Centralbl., 1885, p. 125.

remained stationary for about three weeks, and then all the symptoms began to pass off gradually. His recovery was not complete until six months after the onset.

The prognosis in cases of diphtheritic paralysis is usually very good, the fatal cases here cited being rarities. The treatment consists in general tonic medicines, and the application of electricity to the limbs in the same manner as in other cases of neuritis.

(*b*) Neuritis following variola is a rare complication, and the following case is the only one on record in which an autopsy proved the seat of the lesion.

Observation XVIII.—A young man had varioloid in November, 1881, and while convalescing, six weeks later, began to suffer from severe pains in his four extremities, especially in the joints of his arms, which were diagnosticated as rheumatic, although there was no fever. Soon after there followed a true paresis, with progressive atrophy of the muscles of forearms and legs. The muscles at the same time became very tender to touch or pressure. The tendon reflexes were much diminished. Reaction of degeneration developed in all the paretic muscles. The pains in the joints and limbs continued, but were less severe than at the outset. The sensibility of the skin was about normal. The nerve-trunks were tender to pressure. Profuse, offensive perspiration in all four extremities was a distressing symptom. There was no tendency to bed-sores, but an extensive pemphigus developed in the legs, and then the pains became more severe. The patient died in July, 1882, of pneumonia.

Autopsy showed the brain œdematous, and the cord in a state of hypostatic congestion. The pathological changes of importance were found in the nerves and muscles. The majority of the nerves of all the extremities were found in a state of degeneration and atrophy. There was marked degenerative atrophy and fatty degeneration of the muscles.[1]

(*c*) It is still somewhat a matter of conjecture whether cases of paralysis following typhoid, typhus, and malarial fevers are due to an affection of the peripheral nerves or of the spinal cord. The researches of Pitres and Vaillard[2] have shown that extensive degeneration of peripheral nerves is to be found in the bodies of patients who have died of typhoid fever, and they have also demonstrated that these fevers are often followed by local neuritis as a sequel. Cases of multiple neuritis with autopsies have not as yet been reported after typhoid or typhus; but Buzzard has recently recorded[3] two cases, following malarial fever, in which all the symptoms pointed to an affection of the peripheral nerves. In this country Gibney has described several cases of paralysis of the extremities, of sudden onset, rapid course, and prompt recovery under large doses of quinine, which he considered malarial. Probably the following case, which was kindly sent to me by Dr. L. E. Holt, was of this nature:

Observation XIX.—Peter S——, aged ten, a healthy boy, was suddenly seized with a chill and fever, and with pains of a severe kind in both legs, associated with weakness so that he could hardly stand. The pain was referred to the sciatic nerves, and was accompanied by numbness and tingling of the feet and legs. There was marked tenderness both in the course of the sciatics and in the muscles of the thigh and leg. There was loss of tendon reflexes, preservation of skin reflexes, and marked paresis in all the muscles of the legs, so that he required help in walking. There was no ataxia, and no incontinence of urine. The symptoms lasted about twenty-four hours, and then decreased in severity gradually during the following day, but recurred on the third, and, after a remission, on the fifth day, with lessened severity. The periodicity of the affection and the rapid cure under quinine left no doubt as to its malarial nature. During the third day, at the time when I saw him, there was redness along the course of the sciatics, and in the region of the right median nerve, and extreme tenderness along these nerve-trunks, in addition to the symptoms mentioned. The electric condition was, unfortunately, not tested; but in Westphal's case faradic contractility was totally abolished during the attack.[1] In this case the active manifestation of the malarial poisoning was by a general neuritis. In Buzzard's cases the malarial attacks preceded the nervous affection. The tenderness in muscles and nerves left no doubt regarding the peripheral nature of the disease.

And here I may suggest that it is possible that many minor nervous affections of transient nature and of malarial origin, if more carefully examined, will be found to be due to some abnormal condition in the peripheral nerves. I allude not only to neuralgiæ, but also to visceral neuroses, whose clinical features have been so graphically described by Dr. Clifford Allbutt,[2] and to numb fingers and toes, and to hyperæsthetic and painful areas on the surface, and that host of symptoms of a local character so often carelessly ticketed neurasthenia and dismissed from consideration as soon as named. There is much in the study of the phenomena of neuritis to enforce this suggestion which cannot be developed here.

(*d*) We come, lastly, to those cases of multiple neuritis which occur in tubercular patients, or in those who have had syphilis. If a review of the cases of multiple neuritis already cited be made, it will be found that quite a number of the patients died of phthisis. This was true of the cases of Joffroy, Eisenlohr, Strümpell, Webber, and Müller. Oppenheim[3] has reported cases of multiple neuritis in tubercular patients which went on to recovery. The following case died:

Observation XX.—A young girl, who had had syphilis, and was suffering from phthisis, took a severe cold and began to have pains in the joints, weakness, and numbness of the lower extremities. The weakness of the legs increased rapidly, and was attended by rapid diffuse atrophy. The same symptoms soon developed in the arms. Four weeks after the onset partial RD was present in all the extremities, and total paralysis of the legs and nearly complete paralysis of the arms were present. In the course of the disease, which lasted five months, there was little pain, but great tenderness of the muscles and hyperæsthesia of the skin. The sensation was diminished in feet and hands, but this was slight in comparison with the motor symptoms. The paralysis finally attacked the trunk muscles and the diaphragm, while the beginning of rapid heart action was thought to indicate paralysis of the pneumogastric nerve. Great prostration, delirium, incontinence, bed-sores, and œdema of extremities, with fever, preceded death.

Autopsy: High degree of degeneration of the peripheral nerves, including the phrenic and pneumogastric, was found, with a moderate degree of atrophy of the muscles. Cord normal, anterior motor roots normal. The changes in the nerves were similar to those after section, viz., a simple degeneration of the fibres with some increase in the connective tissue, but there were no evidences of changes in the vessel-walls, no infiltration with cells. The nerves contained very few normal fibres. The myelin sheaths were found in all stages of destruction, down to an entire absence of contents of the sheath of Schwann. Throughout the fibres fatty and granular masses were found. The sheath of Schwann did not, however, show an increase of nuclei.[4]

Such a case as this would have been ascribed, a few years ago, to a tubercular spinal meningitis, as would many of the other cases already alluded to. It is not my purpose to dispute in any way the fact that many cases of paralysis occurring in the course of phthisis are due to lesions of the central nervous system and its membranes; but I desire to emphasize the fact that a multiple neuritis may produce paralysis in tubercular individuals,

[1] P. Grocco, Milano, 1885; Centralbl. f. Med. Wissen., 1885, p. 693.
[2] Rev. de Méd., Des Névrites périphériques, 1885, p. 980.
[3] Paralysis from Peripheral Neuritis, p. 104.

[1] Neurol. Centralbl., 1885. p. 287.
[2] Gulstonian Lectures, 1884.
[3] Oppenheim: Zeitschr f. Klin. Med., 1886, p. 230.
[4] Vierordt: Arch. f. Psych., 1883, xiv., 3.

and the importance of appreciating this possibility cannot be too strongly urged, since the treatment, as well as the prognosis, will differ widely according to the diagnosis made. It has been known for some time that local neuritis may complicate phthisis, and the researches of Pitres and Vaillard have recently confirmed this fact. But the complication of multiple neuritis is one not mentioned in the text-books, and yet is one which is by no means rare. It seems not unlikely that some of the nervous symptoms in consumption, formerly considered functional, may be traced to this affection.

Although syphilis has been described as a cause of neuritis, I cannot find that the lesion in the few cases examined has had the peculiar characteristics of syphilitic lesions elsewhere in the body, and therefore it seems to me doubtful whether we are justified in describing a syphilitic multiple neuritis. Further facts are needed to establish its existence.

(*e*) It only remains to consider briefly the epidemic form of multiple neuritis, and our study of the infectious cases will be complete.

In 1882 Professor Scheube, of Tokio, Japan, called the attention of European physicians to the existence of a peculiar affection prevailing among the Japanese.[1] It was called kakke; from two Chinese words, *kiaku*, meaning legs, and *ke*, meaning disease. It had been known among the Chinese for centuries, being mentioned by name in Chinese medical books written two hundred years before the birth of Christ, and fully discussed by an eminent author in 640 A.D. It ceased, however, to prevail in China about two hundred years ago, and its ravages are now confined, according to Scheube, to Japan. There its importance is considerable, since it is so prevalent that in 1877 fourteen per cent., and in 1878 thirty-eight per cent., of the men serving in the army suffered from it. It is considered a miasmatic infectious disease by Scheube, although an eminent Japanese authority considers it due in some way to the diet of rice. That diet has something to do with its occurrence is proven by the fact, communicated to me by Dr. Wallace Taylor, that since wheat has been substituted for rice in the diet of some of the barracks and prisons in Japan the disease has been less common. It occurs in epidemics, but is always endemic in Japan. It does not attack Europeans. It affects females rarely, only nine per cent. of the cases being in women; and it is the youth of the land, between the ages of sixteen and twenty-five, who are attacked. Exposure to damp and cold in crowded dwellings, such as barracks, increases the liability to the affection. The majority of the cases occur during the hot months, but some are always under observation. This disease is not, however, confined to Japan. It has been observed for many years in the islands of the Pacific Ocean, in India, Ceylon, on the west coast of the Red Sea, in Borneo and New Guinea, in Brazil and Cuba, and its prevalence in the Dutch possessions in the China Sea has made it familiar to physicians from Holland who have visited these colonies. It is there known under the name of beriberi. It is endemic in these regions, but occasionally occurs as an epidemic. An interesting account of such an epidemic, occurring in 1882–83 in Manila, the chief city of one of the Philippine Islands, has been given by Dr. Koeniger.[2] It appears that in the fall of 1882 an epidemic of cholera occurred in Manila, of such severity that twenty thousand persons, in a population of four hundred thousand, were affected. As a precaution against this disease the native population lived for several months almost exclusively upon rice, refusing to eat fruit or fish, which are their other chief articles of diet. As the epidemic was subsiding a terrible cyclone devastated the city, destroying the light wooden houses, and leaving sixty thousand families homeless; and these poor people were exposed for several weeks to the inclemency of the weather, which at this time of the year is rainy. A few days after the cyclone the epidemic of beriberi began, and as the disease had never before appeared in Manila the unknown affection excited great alarm. This was increased by its fearful mortality, sixty per cent. of the early cases proving fatal. Europeans were exempt, with two exceptions, and the Chinese population did not suffer greatly, but among the natives the epidemic was wide-spread. Thus, in one suburb of Manila, of twenty-five thousand inhabitants three hundred died in the course of eight weeks. Men and women were equally affected, and persons of all ages, except young children were attacked. The disease terminated fatally in from ten days to five weeks after its onset; but as time went on the proportion of recoveries increased, and by the end of March, 1883, it had almost disappeared. The months from October to March are the dry, cool season in the Philippine Islands, although the climate is tropical. Exposure to heat could hardly be considered a cause of this epidemic, but whether the exposure to cold and damp, or the diet of rice, or the transportation of some infectious agent by the cyclone was the cause, gave rise to much discussion, and could not be determined.

Sporadic cases of beriberi, or kakke, occasionally appear in our hospitals, usually in the persons of Chinese or Malay sailors, or in the persons of travellers from tropical climates who have been exposed to the infection in the place from which they came. Three such cases have recently been reported by Dr. Seguin, of this city,[1] in patients who came from the West Indies, and a case observed in Bellevue Hospital, by Dr. J. West Roosevelt, was discussed in the Academy of Medicine recently. In 1881 a Brazilian naval vessel entered San Francisco with a large number of the crew affected by the disease. They were sent to the United States Marine Hospital, and attended by Dr. Hebersmith, who gave an interesting account of the circumstances leading to the development of the disease in the United States Marine Hospital Report.[2] From this report the following map is taken, which demonstrates the localities in which beriberi is endemic.

Only last year a commission was appointed by the Dutch Government to investigate the subject of its nature, and the recently published report contains the following statements:[3] The disease is caused by a micro-organism resembling the bacillus of splenic fever, though somewhat smaller, which colors with fuchsin and gentian-violet, and can be seen with a power of 560°. These bacilli are found in the blood, lungs, heart, brain, cord, and nerves of the patients, and can be cultivated outside of the body. The germs infect wooden dwellings chiefly. They may be conveyed by articles of clothing, and probably enter the body by the lungs. Direct contagion has not been observed. A potent predisposing cause to their reception in the body and to the development of the disease is lack of nutrition, consequent upon exposure to damp and to cold, and upon insufficient or bad food. It must, however, be added that a most thorough examination in Dr. Roosevelt's case, by Dr. Prudden, failed to reveal the presence of such bacilli.

In the light of these recent investigations a new view is taken of an epidemic of a peculiar kind which occurred in France in 1828. Buzzard has found an account of this, prepared by Graves, in which the symptoms are so fully detailed as to leave no doubt that it was an epidemic of multiple neuritis.[4]

The cases of beriberi are divided into two general classes, according to their severity.

There are, first, slight cases, in which the onset is gradual, being usually preceded by a little fever, coryza, and conjunctivitis, which cease when the actual symptoms commence. The patient first notices a weak and heavy feeling in his legs, and finds that he tires so easily that

[1] Deut. Arch. f. Klin. Med., xxxi. and xxxii. [2] Ibid., xxxiv.

[1] Medical News, Philadelphia, December 11, 1886.
[2] Marine Hospital Report. 1881.
[3] Deutsche Med. Woch., December 9, 1886 (an abstract only is given). See also Harada: Neurol. Centlbl., 1885, p. 326.
[4] Buzzard: On Paralysis from Peripheral Neuritis, p. 37.

he cannot walk as much as usual. The tired feeling is soon associated with numbness and pain in the legs, and with a slight œdematous swelling. Then, if not before, palpitation of the heart, oppression and weight in the epigastrium, loss of appetite, and general malaise are felt, and the patient finds it necessary to apply for treatment. An examination then shows some diminution of power in the feet and legs, and also in the hands, with loss of tendon reflexes, and much tenderness in the muscles, which show a diminished electric excitability. There is never any ataxia, though the patient sways when his eyes are closed. There is discovered a slight degree of anæsthesia, of irregular distribution, chiefly in the legs and in the radial-nerve region on the forearms. Though the patients look pale, it is usually impossible to find anæmia by examination of the blood.[1] The circulation in the extremities is sluggish. The heart is irregular and rather rapid, and the œdema of the extremities indicates a failure of its power. Dr. Wallace Taylor[1] finds that a sphygmographic tracing is characterized by a sudden high upstroke in ventricular systole, by a precipitous descent from the apex of the percussion-wave, and by dicrotism. Beyond this point these cases, which make up the majority, do not advance. They usually recover in a few days, or at most a month; although a few become chronic and require several months before the cure is complete.

There are, secondly, severe cases. These may present three different types. There is the atrophic or dry type, in which, after an onset similar in nature to that in the slight cases, but much more rapid, the weakness develops into a true paralysis, associated with marked wasting of the muscles and reaction of degeneration, with great diminution of galvanic excitability. Within a week the patient has to go to bed, and then the paralysis soon spreads from the legs to the arms, and may involve the trunk and even the face. The entire muscular system wastes away till the patient is a mere skeleton. In addition to the motor symptoms there is great sensory disturbance. The suffering from pain, paræsthesiæ, and general muscular tenderness is extreme, and the patient lies totally helpless and unable to tolerate the lightest touch. The skin may be glossy. There is usually some anæsthesia, but it is never complete, although it may involve the entire body. The temperature sense is seldom affected. Pain may be delayed in transmission. There are no gastric symptoms, and no œdema. Some cases prove fatal from general exhaustion, or intercurrent disease, but the majority recover after a convalescence which lasts a year or more, during which the muscular system is rebuilt.

There is, secondly, the hydropic or wet type. In these, heart-failure appears early, and is associated with a marked decrease of arterial tension and much œdema of the entire body, effusion into the cavities being added to that beneath the integument. The swelling of the edematous parts conceals the atrophy which is going on in the muscles, but this is indicated by the paralysis, which is as severe as in the preceding form, and it becomes evident during recovery when the œdema has subsided.

There is, thirdly, the acute pernicious type. In this all the symptoms of the two former types appear in rapid succession, and, in addition, gastro-intestinal symptoms and a suppression of urine combine to make the condition an alarming one. Effusions into the pleura and pericardium appear early. The pulse becomes small and irregular, and cyanosis indicates the heart-failure which precedes death.

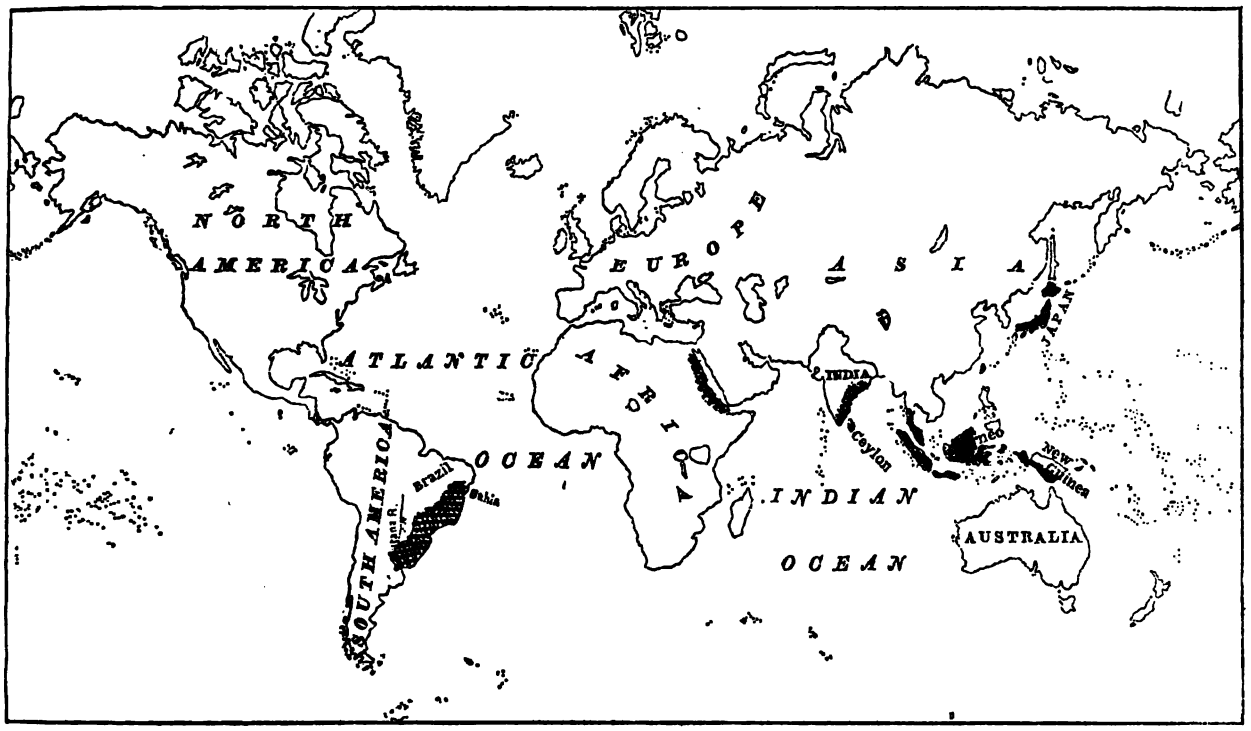

FIG. 6.—Sketch Map indicating the Geographical Distribution of Beriberi. (From United States Marine Hospital Report, 1881.)

In this form the disease may run its course in two weeks to a fatal termination. This was the form which chiefly prevailed in Manila, the cases of the atrophic form being the ones which recovered.

The severity differs much in different epidemics, the mortality varying from two per cent. in Japan to sixty per cent. in Manila. It is usually not above three per cent. In all the forms there is some danger of a sudden heart-failure, and this is usually the cause of death.

The morbid anatomy of the disease is, primarily, a multiple peripheral neuritis, with, secondarily, numerous organic changes in various organs, none of which, however, are essential to the disease.[1]

While we cannot join in the wish expressed by an enthusiastic German author, that the disease may soon become a familiar one to those outside of Japan, we cannot pass it by without a brief reference, especially as it resembles in so many of its features, as well as in its pathological basis, the condition which has occupied our attention at present. And it may not be unprofitable to obtain a clinical picture which differs somewhat from

[1] Wallace Taylor, M.D.: Studies in Japanese Kakke. Osaka, 1886.

[1] Scheube: Virch. Archiv, Bd. 95, s. 146.

that already viewed, in connection with the forms more familiar to us, in order to detect sporadic cases of the disease, if such should appear among us. As to its treatment, it may be mentioned that quinine failed to influence its course, and that heart-stimulants to combat the dangerous complications, hypnotics to counteract the pain and insomnia, and general tonic treatment have proved of the greatest service. Change of climate often is attended by recovery. In the stage of recovery electricity and massage have been employed with advantage.

III.—In a considerable number of cases of multiple neuritis no cause of the disease could be definitely ascertained. Great fatigue by walking, or by hard labor, and exposure to dampness and cold are assigned as causes in some of these cases, and may have acted as etiological factors. In others the disease seems to have developed spontaneously.

The following cases are cited as belonging to this class:

Observation XXI.—A perfectly healthy man, aged thirty-four, after a long and fatiguing walk was suddenly attacked with weakness of the legs, pain, and formication, which increased so rapidly that in two days he could not walk, and in eight days was totally paralyzed—legs, trunk, arms, face, and pneumogastric nerve being all involved. The paralysis was attended by severe pains, tenderness along the nerves, profuse perspiration, fever, and jaundice. Further, a diminution of sensibility, a loss of tendon reflexes, a loss of muscular sense, a rapid atrophy, with reaction of degeneration, were observed; and trophic disturbances, consisting of an abnormal growth of hair and pigmentation of the skin, as well as vasomotor disturbances in the form of œdema, appeared. There were no fibrillary muscular contractions, no increase of mechanical excitability, and no incontinence of urine or fæces. During the following four months a gradual improvement took place, which went on to final recovery a year and a half after the onset. The only anomaly at that time was an absence of contractility of the muscles to the electro-current, when excited through the nerve.[1]

Observation XXII.—A female, aged forty-two, previously in good health, was attacked, on October 1st, with pain in the back and in all four extremities, attended by great weakness, which increased so rapidly that on October 13th there was found to be an almost total paralysis of both legs, of the trunk, and of certain muscles of the arms. The pains were accompanied by a feeling of formication and a painful sensation of tingling. When first seen by Dr. Guttmann there was total paraplegia, slight movements in fingers and toes being the only motion possible; the muscles were all relaxed and flabby, were much atrophied, were tender to pressure, and a few of the smaller muscles showed slight diminution of faradic excitability. There was no disturbance of sensation. The tendon reflexes were abolished. The sphincters were not involved. The temperature was normal, but the pulse was unduly rapid. There were no bulbar symptoms. Under large doses of iodide of potassium and the application of faradism, the patient recovered completely in the course of three months.[2]

In some of the cases of this form the early pains were located in the joints, and led to the diagnosis of rheumatism. The fact is merely mentioned to call attention to the possibility of mistake. A careful examination will never fail to correct it.

SYMPTOMS.—Turning now to the consideration of the individual symptoms of multiple neuritis, and their course, we are at once impressed by their number and variety.

The *sensory symptoms* are the earliest to appear and the last to pass away. In the majority of the cases on record, from whatever cause, numbness, tingling, or formication usher in the disease. These forms of paræsthesiæ begin in the feet and hands, and extend to the knees and elbows. They may be associated with burning, stretching, boring, or tearing sensations, which distress the patient, especially during the onset. But all such sensations usually subside as the affection reaches its height. Their recurrence, as the case goes on, may be regarded as a favorable symptom, however annoying, for they frequently precede recovery, and are among the last evidences of the disease to disappear. Pain is usually present as well as paræsthesiæ. It may occasionally be sharp in character; but is usually moderate and not continuous. At times it may be lancinating, and so severe as to necessitate the use of morphia. But it is rarely as distressing as in cases of locomotor ataxia. Tenderness in the nerves and muscles is a constant symptom. It may be so marked that the limbs cannot be moved or handled, and thus it may interfere with the application of electricity and massage. When the tenderness and pain are referred to the joints, as not infrequently occurs in the early stage of the disease, the case may be mistaken for one of acute articular rheumatism, and if the joints are swollen or the limbs edematous the difficulty of diagnosis is greatly increased.

In addition to these subjective feelings some demonstrable disturbance of the various sensations is usually present. Hyperæsthesia to touch, and also to electricity, is not infrequently observed during the first few weeks. It is usually followed by some anæsthesia, although this rarely becomes complete. In some cases the loss of tactile sense is quite evident from the outset, either limited to the cutaneous distribution of some special nerve, in which case oddly shaped areas of insensibility will be found, or, as is most often the case, about uniformly distributed over the distal parts of the extremities. When the anæsthesia is at its height the patient has difficulty in locating a touch upon the limb, even though he feels it. The transmission of pain and temperature-sensations is always delayed, but the impressions are usually felt quite acutely. The sense of pressure has been tested in only a few cases, and in those it was decidedly impaired. The muscular sense escapes any affection in some cases, but in others is the most profoundly disturbed of all the senses. When it is involved, the inco-ordination and ataxia are well-marked symptoms, and, as already stated, some of the cases have been mistaken for locomotor ataxia, because of the predominance of the disturbance of muscular sense.

These sensory symptoms are usually limited to the forearms and hands, and to the legs and feet. In a few cases they have involved the entire extremities, and even the trunk; and one case of facial tingling, with anæsthesia, has been recorded.[1] The skin reflexes are usually preserved.

The special senses are rarely affected in multiple neuritis. It is true that optic neuritis has occurred in a few cases, and in two cases hearing as well as sight has been affected. These cases prove that no nerve can be said to be exempt from implication in this disease, but the liability to affection seems to be slight in the case of the nerves of special sense.

The *motor symptoms* are as marked and as important as the sensory. Paralysis, beginning as simple weakness, with a feeling of fatigue on any exertion, gradually increases in severity until at the height of the disease it becomes complete. It usually comes on rapidly, so that within two weeks the patient is helpless; but it may be less sudden, and not deprive him of the power of walking and of using his hands for two or three months. In a few cases a very acute onset is recorded, all the symptoms developing within three or four days. The distribution of the paralysis is not uniform at the outset. It may develop in the muscles supplied by a single nerve, and advance to others; it may begin in all the muscles of the legs, and then involve those of the forearms; it may

[1] R. H. Pierson: Ueber Polyneuritis Acuta, Volkmann's Klin. Sam., 1883, No. 229.

[2] Guttmann: Deut. Med. Wochenschr., 1884, No. 19.

[1] Lowenfeld: Neuro. Centralbl., 1885, No. 7.

commence in all four extremities at once. It is always more severe in the muscles which move the joints of the feet and hands, and the ankles and wrists. It rarely invades those which move the knees and elbows. When the disease is fully developed, all the muscles below the knees and elbows are much weakened or totally paralyzed. In a few cases those of the thighs and arms are involved also, and occasionally the muscles of the trunk and those of respiration become affected and the patient dies. When such a paralysis makes rapid progress and involves all the body, the case resembles Laudry's paralysis. But in multiple neuritis, as has been already stated, the disease does not creep up from legs to thighs, and then to trunk and arms, as in Laudry's paralysis. It spreads from feet to hands, from legs to forearms, and the trunk is invaded only at the end, and in Laudry's paralysis sensory symptoms are wanting. In some cases of multiple neuritis the cranial nerves become involved; those of the eye and of the face being most liable to invasion. It is only in fatal cases that the action of deglutition has been affected; and when the pneumogastric is invaded, and the heart becomes rapid and irregular, the prognosis is always grave. Spasms rarely occur.

The paralyzed muscles are relaxed, flabby, and atrophied; they may or may not lose their mechanical irritability, but their normal tone is always lost, and hence the so-called tendon reflexes are abolished.[1] To the electric current their excitability is very rapidly and markedly changed; but the conditions which have been observed are quite various. Sometimes there is a simple diminution of excitability, and then a very strong faradic or galvanic current is needed to produce contractions. Frequently all faradic excitability is lost, and then the muscles react to a galvanic current only. In this condition it may require a very strong galvanic current to produce contraction, and this fact is quite pathognomonic of neuritis. For an anterior polio-myelitis, where the muscles respond to galvanism only, it does not require a strong current to cause a motion until some months after the invasion. The action of the different poles is not uniform. In many cases the contraction of the muscle when stimulated with the positive pole is greater than when stimulated with the negative pole, and the contractions may be sluggish. Then the reaction of degeneration is present. But in some cases the normal condition is found, and the negative pole produces stronger contractions than the positive pole. If the muscles that are not paralyzed be tested, the same electrical changes may often be discovered in them. A loss of faradic irritability and a marked decrease in the galvanic irritability of the muscle and nerve are, therefore, important symptoms of multiple neuritis. And as the disease goes on to recovery a gradual increase in the galvanic irritability occurs, a fact which is often of much aid in prognosis if careful measurements of the strength of current used be made by the galvanometer. I am accustomed to record such measurements upon charts, and thus to obtain an electric curve for each muscle which is paralyzed.[2] These curves enable one to judge of the progress of the case quite accurately, and when the line is advancing steadily toward the normal point, after a great deflection or after a stationary level, the prognosis is very favorable.

As a result and accompaniment of the paralysis *abnormal positions* are assumed by the limbs. The dropped wrist and dropped foot are quite characteristic of multiple neuritis. But other deformities may be present. In a few cases there have been extreme contractures of all the extremities in flexed position. And not infrequently the appearance of the claw-shaped hand, and some one of the various forms of talipes, indicates a serious shortening of one set of muscles, and corresponding weakness of its opponents. These deformities usually subside as the power returns, or if they do not they can be corrected by proper manipulation and by apparatus. In a few cases it has been necessary to resort to tenotomy, but a permanent deformity has not been recorded.

The *vaso-motor and trophic symptoms* are less constant than those already described. In some cases marked œdema has been an early and a permanent symptom. This may develop in the feet and hands, or may appear about the joints. It usually is temporary. The circulation is not impaired any more than is customary in a limb whose muscles are inactive, and coldness and cyanosis are rarely sufficient to attract attention. Sometimes profuse perspiration is a noticeable symptom, being limited to the paralyzed parts. It may be offensive, and by its evaporation always causes a complaint of coldness. In other cases glossy skin makes its appearance early, and remains until regeneration of the nerves begins. Its disappearance in one of my own cases was the first sign of recovery in the lower extremities. Other forms of trophic disturbance are rarely met with in multiple neuritis. And this is quite remarkable in view of the fact that it has been the tendency of late to refer such trophic affections as ulcerations, bed-sores, gangrene, pemphigus, and various eruptions to lesions of the nerves.[1] It is true that inflammations of the joints, resembling those appearing in acute rheumatism, sometimes occur at the onset of neuritis; but as they disappear quickly, while other symptoms remain, it is improbable that they are to be traced to the changes in the nerves. They may be due to the infectious agent, or to the same obscure cause which sets up the neuritis, or they may be evidence of an attack of acute articular rheumatism, which is in turn followed by neuritis; but they cannot be described as trophic symptoms of the disease, otherwise they would be more constant in their occurrence and more permanent in their duration.

A negative symptom of some importance is the absence of any interference with the automatic acts controlled by the sphincters.

One word about the onset. Occasionally it is sudden and accompanied by a marked febrile movement, with chill, and temperature of 103° to 104.5° F. The fever may persist for several days, but usually subsides spontaneously and does not recur. In a few cases there has been a constant elevation of temperature from one-half a degree to one and a half degree above the normal; and an increase in the rapidity of the pulse throughout the disease has been noticed. A pulse of ninety need give no alarm, but if it runs up to one hundred and forty, and becomes irregular, there is reason to believe that the disease has attacked the vagus nerve, and then the prognosis becomes serious, though not by any means hopeless.

The duration of the disease varies considerably in different cases. An average of twenty-five cases gives seven months as the probable time required for complete recovery. But in these cases the duration varied from two months, in the most favorable, to sixteen months, in the most refractory.

The disease is more common in males than in females, excepting the form produced by alcoholism. Of 47 non-alcoholic cases, 33 were males.

All ages are liable to be affected, but in the records of multiple neuritis, excepting the form produced by diphtheritic poison, the cases recorded do not include any children.

That children may be affected is, however, not at all improbable. Dr. H. D. Chapin, of this city, has described four[2] cases of atrophic paralysis in children, in which the presence of sensory symptoms, pain and mus-

[1] A few exceptions to this rule are found in two cases recorded by Strümpell and Möbius, Munchener Wochenschrift, 1886, No. 34, and in Brit. Med. Jour., January 1, 1887.

[2] Electric Charts, Journal of Nervous and Mental Diseases, February, 1887.

[1] Raynaud's disease has recently been ascribed to neuritis. See J. Wigleworth, Brit. Med. Jour., January 8, 1887.

[2] Painful Paralysis in Children, NEW YORK MEDICAL RECORD, January 15, 1887.

cular tenderness, and the steady progress toward recovery pointed to the existence of multiple neuritis. The cases were such as are usually called infantile paralysis, but there were points of difference (viz., the existence of sensory symptoms) which removed them from this category. Leyden called attention to the possibility of mistaking neuritis for poliomyelitis in his first article upon the disease, but he referred to adult cases rather than to children's cases. And if the surmise of Chapin should be substantiated by autopsy, it might be necessary to conclude that in children, as well as in adults, the majority of cases of supposed poliomyelitis which recover are cases of multiple neuritis.

In adults, out of 50 cases 6 were between the ages of 18 and 20; 8 between 20 and 30; 20 between 30 and 40; 8 between 40 and 50; 5 between 50 and 60 and 3 over 60 years of age.

Diagnosis.—While the individual symptoms occurring in the course of multiple neuritis are not different in character from those found in spinal-cord diseases, the diagnosis can usually be reached with very little difficulty when their combination, the causation, and the course of the case under examination are considered. The varying combination of the symptoms possible has been manifest during their description, and it is not my intention to review them again. There are, however, three combinations which resemble very closely, respectively, anterior poliomyelitis, locomotor ataxia, and diffuse myelitis, and to these attention must be directed.

Atrophic paralysis, with reaction of degeneration and loss of reflex is common to anterior poliomyelitis and some cases of multiple neuritis. In the latter a more gradual onset, preceded and attended by numbness and pain, tenderness in the course of the nerves, tenderness in the muscles, and the persistence of sensory symptoms after the invasion, will remove all doubt regarding the diagnosis. When these symptoms are not clearly marked, the distribution of the paralysis in symmetrically situated muscles, especially if these muscles are supplied by single nerves, and the further extension to muscles in other nerve domains, rather than the affection simultaneously of muscles which are grouped physiologically (*i.e.*, act together to perform one function), will point to neuritis. In neuritis the paralysis advances more or less gradually, while in acute poliomyelitis there is, after the onset a subsidence of the paralysis in some of the muscles first involved. And lastly, as the case goes on, a gradual complete recovery will be far more frequent if it was originally a case of multiple neuritis.

Ataxia, loss of knee-jerk, pain, and sensory disturbances, including a loss of muscular sense, Romberg's symptom, and optic neuritis are common to locomotor ataxia and multiple neuritis. In the latter the relatively rapid onset of the ataxia, which follows closely upon the sensory symptoms; the prominence of numbness and anæsthesia, rather than of lightning pains; the extreme degree of the anæsthesia and analgesia; the tenderness of muscles and nerves; the usual occurrence of some degree of actual paresis with atrophy and RD; and the absence of bladder and sexual symptoms will point inevitably to the diagnosis. Furthermore, the ataxic form of neuritis only occurs after poisoning with alcohol or arsenic, or as a sequel of diphtheria, and the establishing of the causation will aid the diagnosis. Here, again, the course of the case toward recovery, with return of the knee-jerk, will decide in favor of neuritis, if the diagnosis has not been reached in an early stage.

There are very few symptoms of diffuse myelitis which are not found in cases of neuritis. But cases of diffuse myelitis of the type of Duchenne—paralysie générale spinale subaigüe ascendante—are very rare, and indeed by Leyden it has been affirmed that all such cases are multiple neuritis. Other authorities dispute this assertion and leave us to establish points of difference. These are as follows: In neuritis affections of the functions of micturition and defecation do not occur. Girdle sensation is very rarely mentioned as a symptom; bed-sores and cystitis have not been observed. The advance of the paralysis is rarely from the legs to the thighs and trunk, and then to the arms; it is usually from the legs to the forearms, the trunk and thighs escaping, and, as a rule, the distal portions only of the extremities are paralyzed. If the muscles of the abdomen and respiration are involved, it is only in rapidly fatal cases. In neuritis there is usually some ataxia, and loss of muscular sense is quite evident; while in some, at least, of the cases of myelitis of Duchenne, there were no sensory symptoms at all. Finally, the tenderness of muscles and nerves, and the absence of tenderness to pressure or to heat in the spine, would decide in favor of neuritis. The diagnosis from meningitis of the cord, from tumors or hemorrhages into the cord, or from general paralysis of the insane, would rarely present any difficulty to one who was familiar with the symptoms in those affections, and who knew the prominent features of multiple neuritis.

No small difficulty may be encountered, however, in settling the question whether in a given case we have to deal with multiple neuritis alone, or with multiple neuritis which is complicated by myelitis. The importance of the question is evident, since the prognosis in the two conditions is very different; and the number of autopsies on record in which this complication has been demonstrated, though few, is sufficient to make a decision of the question necessary.[1] The following points may enable a determination of the question to be reached: (1) As long as a case is increasing in severity, or in the extent of the symptoms, no one can determine the extent of the lesion. It is only when its course has become stationary that the question of exact limitation will arise. Many cases remain practically without improvement for three or four months, and then gradually recover. A stationary condition alone does not, therefore, excite fear of a complication. But neuritis tends spontaneously to recover, the process of regeneration beginning soon after the degeneration has ceased. If, therefore, there appears to be no improvement of the condition after the fourth month, the probability is either that the cause of the disease has not been removed, or that a myelitis has developed and prevents recovery. (2) The course of a case of neuritis is quite characteristic, the symptoms reaching their maximum in a short time, and then subsiding. If, after a stationary period, further symptoms develop, we must believe either that the cause of the disease is renewed (*e.g.*, the use of alcohol) or that myelitis has begun. The symptoms of such a myelitis will be an increasing weakness and more rapid and progressive atrophy of the muscles; a gradually decreasing degree of galvanic excitability in the paralyzed muscles; a loss of pain and temperature senses, which, as a rule, are not affected in neuritis; a decrease in the paræsthesiæ, and an increase in the degree of anæsthesia; the development of loss of control over the sphincters; the occurrence of bed-sores, furuncles, eruptions of a bullous nature; and the beginning of cystitis. (3) On the other hand, if the symptoms are gradually improving; if the power gradually returns; if the anæsthesia decreases, and is succeeded by paræsthesiæ, however disagreeable to the patient; if the galvanic excitability becomes gradually more acute in the muscles, so that the electric curve approaches the normal line; if the faradic contractility returns in the muscles; if the tenderness of muscles and nerves decreases; and if the glossy appearance of the skin disappears, it may be stated that no complication of myelitis has occurred, and that recovery, though possibly prolonged, will at length result.

Another question of diagnosis must also be considered. It is found that in no small number of cases of locomotor ataxia multiple neuritis develops as a complication. How can we determine when this complication exists? The symptoms of the two diseases may be so nearly iden-

[1] Oppenheim, Zeit. klin. Med., xi., 232; Leyden, Charité Annalen, 1878; Duménil, Gaz. Heb., 1861.

tical that difficulty arises in distinguishing them. When they coincide it is equally difficult to determine to which disease any given symptom belongs. Pitres and Vaillard,[1] who have considered this subject most carefully, affirm that there is no constant relation between the severity of the central and peripheral lesions when they coincide. But there are certain symptoms which develop in some cases of tabes, but not constantly, which may be looked upon as accidental, and thus traced to neuritis. Such are the appearance of plaques of anæsthesia and analgesia of limited area, muscular weakness or paralysis of limited extent, trophic disturbances in the skin (*e.g.*, perforating ulcer), nails, joints (*e.g.*, Charcot's disease), bones (*e.g.*, spontaneous fractures), and teeth (*e.g.*, spontaneous falling out), and possibly the various crises referable to the viscera and larynx. In cases which competent observers have examined, peripheral neuritis has been found *post-mortem* in the nerves supplying the parts in which these symptoms appeared. It is, therefore, reasonable to conclude that in any case of locomotor ataxia in which these symptoms develop we have to deal with a posterior sclerosis which is complicated by a peripheral neuritis. And here again the distinction has a bearing upon the prognosis, for the symptoms of the accidental kind may pass off, while those due to the central lesion will remain. While these conclusions of the French authors are of importance, it must be noticed that their claim that trophic disturbances are due to a complicating neuritis is by no means substantiated by the history of cases of multiple neuritis, in which, as we have seen, trophic disturbances of the varieties mentioned do not often occur.

Prognosis.—The prognosis in multiple neuritis is good, provided the exciting cause can be removed. The only cases which form an exception to the rule are those whose constitutions are much impaired by excesses or by other diseases; those who have so far indulged in alcohol or are so completely soaked with arsenic or lead as to be unable to throw off the poison; and those in whom the disease begins with great suddenness, advances rapidly, and involves the phrenic and pneumogastric nerves. These cases either die of respiratory paralysis or of some complication. When a case has reached the stationary period the prognosis is generally favorable, and if the encouraging signs of recovery already mentioned begin to appear a cure may be promised. The possibility of the complication of myelitis must not, however, be overlooked, and if it occurs the prognosis becomes at once unfavorable. Even in serious cases of alcoholism, with gastro-intestinal and cerebral symptoms, if the acute stage is safely passed and all alcohol be removed from the patient's diet, recovery from very extensive paralysis will occur. The cases of diphtheritic paralysis and ataxia usually recover without treatment. The cases occurring with syphilis and tuberculosis are not so uniformly favorable, although the former usually respond promptly to specific treatment, and even the latter may recover wholly. In epidemics, the percentage of mortality has been found to vary, but is usually low.

Treatment.—The treatment of multiple neuritis requires patience, but receives the reward of success. As we have already seen, the majority of the patients recover, and it is probable that, if the cause of the affection were removed and the patients placed in favorable circumstances, expectant treatment would alone be sufficient. It is, however, not advisable to let therapeutics play a passive part. The course of the disease can be altered and its duration much shortened by active interference. In the stage of invasion the free use of salicin, salicylic acid, or the salicylate of soda seems to have important results. These remedies cannot be said to act as promptly as in cases of acute articular rheumatism, but the consensus of opinion is that their effect in multiple neuritis is very marked. They should be given, as in acute rheumatic fever, in large doses until noticeable effects are obtained. They should be combined with the bromide of potash or soda, partly because these drugs counteract unfavorable symptoms produced by the salicin compounds, and partly because in the hyperæsthetic irritable condition attendant upon the invasion of the disease they are indicated. This condition may require stronger sedatives, and not infrequently morphine must be employed to give relief from the excruciating pains. The pains are often relieved by hot or cold applications to the limbs; but as the muscles are often exceedingly tender ordinary applications cannot be made. It is then advisable to use evaporating lotions, preferably those containing chloroform, which may be soaked into light cambric or gauze, and gently placed upon the limbs, which lie upon the softest pillows, or which may be more comfortable if the patient is put upon a water-bed. Applications of a five per cent. solution of carbolic acid have also been of use. If cool applications prove intolerable, heat may be employed. The limbs may be enveloped with cotton and covered with oil-silk, a light bandage keeping these in place; or they may be frequently bathed in hot water, and hot bottles placed against them, some soft substance intervening. One of my patients found great relief from the paræsthesia by cold douches, while another preferred the use of hot water. It is best to let the patient decide as long as the application has to be made for the relief of pain. Gentle friction with oil of cocoanut often affords comfort. In the chronic stage, as we shall see presently, heat is to be preferred to cold. Cases which are distinctly syphilitic, if such occur, should be treated from the outset with inunctions of mercury and large doses of iodide of potash. I believe that both these drugs should be employed together, even in the tertiary stage of syphilis, and it is my experience that all syphilitic nervous lesions, whether central or peripheral, yield more promptly to their combined use than to the employment of either alone. Malarial cases must be treated with quinine or Warburg's tincture. In non-malarial cases quinine has proved of no avail. In cases which are due to poisoning of any kind the first necessity is to eliminate the toxic agent from the system, and the second to prevent any further ingestion of the poison. Iodide of potash aids in the elimination. The second indication is easily fulfilled when arsenic or lead are the toxic agents, but when the case is due to chronic alcoholism special precautions are needed. Alcoholic cases require from the outset special treatment. The condition at the time of the onset of the paralysis may be one verging upon delirium tremens. If all alcohol is suddenly removed, without due care to supply some other heart-stimulant and to secure the perfect nutrition of the patient, serious collapse may ensue. The first necessity is therefore to take care of the general condition of the patient. If this will admit of the immediate withdrawal of all alcoholic stimulation it should be done; if not, the alcoholic beverage must be immediately reduced in quantity, and as soon as possible wholly cut off. The use of milk diet, or kumyss, or pancreatized milk, or, if necessary, rectal alimentation will be followed by a gradual recovery of the power of assimilation, and as soon as the patient ceases to lose weight all alcohol may in any case be safely stopped; its elimination by the intestines and kidneys may be hastened by appropriate means, and cerebral symptoms, if they arise, may be treated as in other cases of alcoholic intoxication. But it is in the chronic stage, when the patient is gradually recovering, that the vigilance of the physician is called into play to prevent a renewal of the poisoning. It is amazing that patients who know perfectly the injurious effect of alcohol upon them should insist upon getting it. But it is done. And when these patients are surrounded, as is often the case, by sympathizing friends, or servile domestics, or unscrupulous nurses, who do not appreciate the importance of total abstinence either for themselves or for the patient, they often succeed in baffling all attempts to deprive them of the favorite drink. It is only

[1] Pitres et Vaillard: Des névrites périphériques chez les tabétiques,] Rev. de Méd., 1886, p. 574.

when they are watched constantly by persons who can be implicitly trusted, and who have sufficient authority to cut off all surreptitious supplies that the physician can feel sure that his commands are obeyed. And this precaution is by no means needless even when it is probable that family servants are trustworthy; for the continued plead ing and remonstrance of the patients may corrupt the best of attendants, especially if accompanied by threats of discharge at a future day. It is therefore necessary to place these patients under the surveillance of trained nurses from the start, or to remove them to an institution where they are under control.

In the chronic stage the drugs which are of greatest service are strychnia and arsenic. Strychnia may be given in doses of $\frac{1}{60}$ to $\frac{1}{30}$ gr. t.i.d., and it is well to combine it with phosphoric acid and the syrup of the hypophosphites. Arsenic may be used in tablets or pills containing $\frac{1}{100}$ to $\frac{1}{50}$ gr. t.i.d., or in Fowler's solution, five to eight drops t.i.d. The use of iron with these two drugs will be indicated in the majority of cases where there is attendant anæmia. In alcoholic cases both arsenic and strychnia may increase the mental irritability, but should be continued unless this becomes too great. I have seen benefit from both of these drugs, and think it well to employ them alternately, using each for about two weeks at a time.

The remedies used in the chronic stage have two objects: one is to increase the rate of repair in the nerves; the other is to keep the nutrition of the muscles as good as possible. While the drugs mentioned probably meet the first indication there are other remedies which meet both. These are massage, warm baths, and electricity.

The proper manipulation of the limb increases the circulation in it. The increase of circulation brings fresh supplies of material to the nerve which is undergoing repair; it also aids the nutrition of the muscle, which would otherwise be decidedly affected by the sluggish flow of venous blood, due to the lack of functional activity. As soon, therefore, as the active progress of the disease is checked and the muscular tenderness has sufficiently subsided to allow the limbs to be rubbed, this potent remedy should be employed daily.

Allusion has already been made to baths and douches in the early stage, for the purpose of quieting sensory symptoms. In the chronic stage the object is a different one. Like massage, warm baths and douches stimulate the circulation and aid the nutrition and reparative processes in progress. Hence they are to be used daily. And if the warm bath be given at night it will secure not only a local action but produce a general sedative effect, insuring quiet rest. In multiple neuritis as well as in many other nervous affections not due to anæmia, a warm bath at night or a warm douche to the neck and spine is far preferable to, and more efficacious than, the majority of hypnotic drugs in causing a good night's sleep.

The last agent to be mentioned is electricity. It is, however, among the first in importance, and in its use it is necessary to know what object is sought in its application. There is first the object of increasing the progress of nerve regeneration. This may be attained by the application of a constant galvanic current to the degenerated nerve, passing the current through the nerve in either direction, or in both alternately. A mild current should be employed, its strength being measured by a galvanometer. The strength of the current will depend: (*a*) on the size of the sponges placed upon the skin, (*b*) on the pressure upon the sponges, (*c*) on the resistance of the skin, and (*d*) on the number of cells of the battery used. If the sponges are two inches in diameter, six milliampères is enough; if they are three by five inches in measurement, twenty milliampères should not be exceeded. If no galvanometer is used the strength of the current employed is uncertain. But it is to be remembered that the current grows stronger the longer it passes, since the skin resistance is gradually overcome; and therefore, if the strength is measured in cells, the number of cells used should be decreased gradually during the application. As so few practitioners use a galvanometer it may be well to state that with large sponges (*i.e.*, three by five inches) wet with warm water a freshly filled bichromate of potash battery will give nearly one milliampère of strength for every cell used during the first three minutes, provided the sponges be put on any part of the body except the soles of the feet or the palms of the hands, and pressed firmly upon the skin. After the first three minutes the body resistence decreases, so that when twenty cells are used to start with, one should be cut off every half minute until the number is reduced one-third. The duration of the application should be about ten minutes to each limb. During this time the distal sponge should be passed over various parts, so as to include all the nerve-branches in the current; the central sponge should be put over the nerve-trunk high up on the limb. The current should be begun and stopped gradually, and never suddenly broken; applications may be made daily.

The second object to be obtained is to re-establish the conduction of impulses in the regenerated nerve. This is secured by the method just described. It may be attained by the use of faradism, the interrupted secondary current being sent along the nerves by placing one pole over the nerve-trunk and passing the other over the skin of the limb. The strength used should be just sufficient to be felt distinctly through the palms of the operator's hands. The third object sought is to maintain the nutrition and function of the muscles by exercising them, and thus preserving their normal irritability. This cannot be done by a faradic current as long as they do not contract to it. The galvanic current must therefore be employed. But now it is not a steady current which is needed, for this does not cause any motion. It is only when the steady current is suddenly broken and renewed that the contraction occurs. Hence place one pole over the trunk of the nerve and the other upon the muscle, and with an interrupting electrode make and break the current at the pole which is on the muscle. The pole which produces a contraction with the least current possible is the one to be applied to the muscle. This is in RD the positive, in normal conditions the negative pole. Each muscle should be exercised for three or four minutes every other day. When electrical treatment is thus employed very marked improvement is observed, which can be measured accurately if a galvanometer is used, since every week will show a change of the strength of current needed to produce muscular contractions toward the normal.

The treatment must be kept up, in the chronic stage, until recovery is complete.

If contractures have occurred in the paralyzed limbs persistent massage may overcome them. If it does not, they are to be treated on general surgical principles.

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Original Articles.

A HELP TO THE TEACHING OF PHYSICAL DIAGNOSIS.

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REMEMBERING the difficulties encountered in mastering physical signs as a student of medicine, and recognizing like difficulties daily occurring among the students of the various classes in physical diagnosis held in Bellevue Hospital, I have been led to devise some means for the more rapidly and surely acquiring the knowledge sought.

In a class, say, of thirty students, and with some ten or fifteen interesting cases to "go over" in an hour, it is very possible that many students, while occupied in the examination of an individual case, will lose the demonstration of another of equal interest by the physician conducting the class.

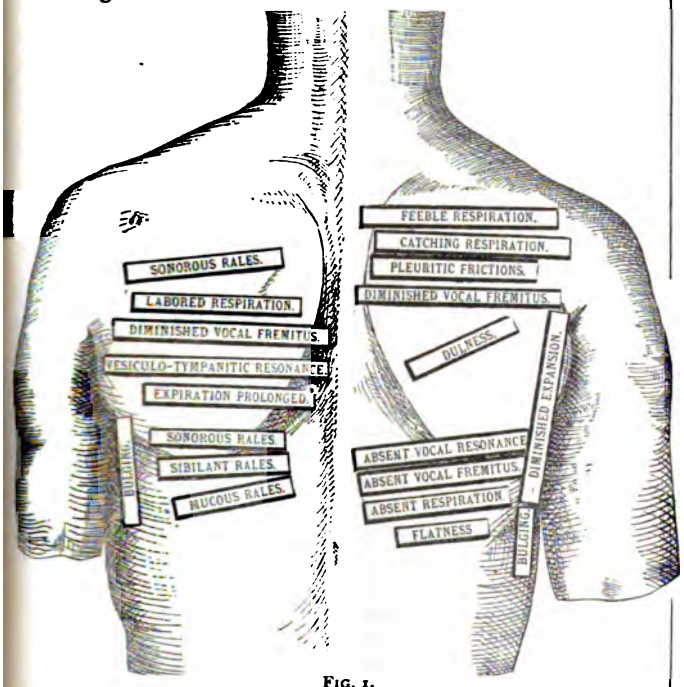

FIG. 1.

Thus, when a student, as above, comes to a patient he has failed to hear percussed or seen palpated, he is uncertain in his own mind of the signs present, and the demonstration has to be repeated.

To do away with this difficulty it has been my custom, as assistant to Professor A. L. Loomis in his class of physical diagnosis, to label each patient, after Professor Loomis has made his examination, with the name or names of the particular conditions present, these conditions being detected by inspection, palpation, percussion, etc.

For this purpose small strips of rubber adhesive plaster have been printed, with the various signs of thoracic and abdominal disease, as indicated by the above mean of diagnosis.

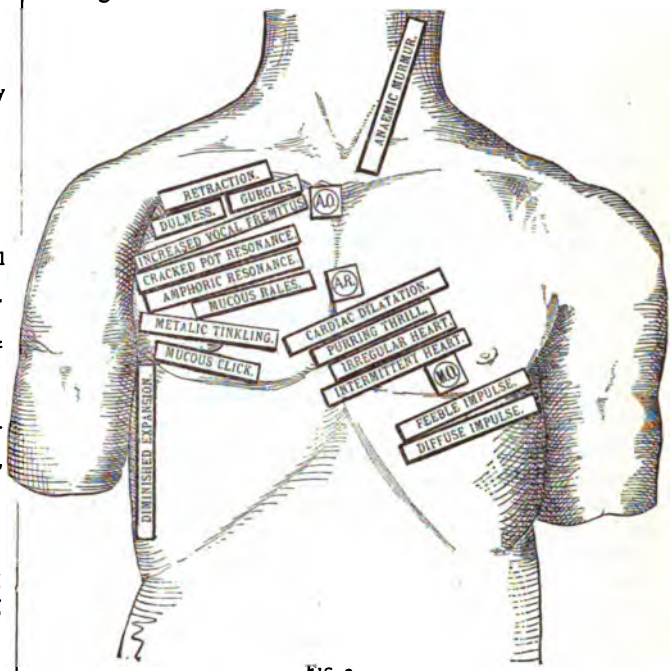

FIG. 2.

The lettering is in clear block type, very compact, and the plaster adhering so closely to the surface, and being so small in area, there is no danger of its giving rise to abnormal sounds or obstructing the examination.

For example, after the physical signs contained in a perfectly normal chest are mastered, a case, say, of emphysema, is taken.

This case is examined by a practised ear, labelled with the signs found, and handed over to a student to go over at his leisure.

Another case, say of general bronchitis, is treated in a like manner. The student is thus certain in his own mind as to what the sounds heard within the chest signify. Having once heard a certain normal or abnormal sound, he is pretty certain to recognize it in the next instance without any such aid.

The accompanying cuts explain themselves. Fig. 1 would represent some of the signs to be found in a man having a large cavity at the upper part of his right lung, together with cardiac dilatation with murmurs at aortic and mitral orifices.

Fig. 2 would represent the posterior surface of a man's chest having a pleurisy with effusion on his right side, and emphysema and bronchitis of his left lung.

AN INEBRIATE ASYLUM IN ITALY.—In 1882 there was established in Milan a temperance society, the first and only one in Italy, called the Patronato di Temperanza. As an aid to its work of reform the society has determined to establish an asylum in Milan for the reception and care of inebriates desiring to be cured of their affliction, and for this purpose has issued an appeal to the charitably disposed in that city for assistance.

A CURIOUS REMEDY FOR TYPHOID FEVER.—The New York correspondent of one of our exchanges, in a notice of the treatment of typhoid fever in the different hospitals, says that at Mt. Sinai Hospital Catholics are omitted in this fever. We never heard of Catholicism being a very efficient antipyretic, except perhaps as a long-range prophylactic, and we presume the author wrote cathartics.

Progress of Medical Science.

A Case of Nervous Contagion.—Dr. Kreuser relates the clinical history of a family which furnishes a curious example of induced mania. A girl, eighteen years old, began to suffer from religious melancholia, with delusions of obsession, and having no treatment soon became insane. She passed whole days and nights praying and making her parents pray also. A few days later the family shut up the doors and windows, and all sat around the table with Bible and Prayer-book before them. The father and mother pounded on the table with their fists and cried continually: "If it is right, so must it be." Everyone who tried to enter the house was driven away with blows. The most violent of all was the younger sister of the patient first seized. Finally the neighbors became alarmed at the state of things and made a regular assault upon the house, finally gaining admittance, and then carried the inmates off to a hospital. Here the patients gradually became quiet, and were restored one after another.—*St. Petersburger Medicinische Wochenschrift*, No. 36, 1886.

The Treatment of Pleurisy in Children.—Dr. Wiederhofer has recently studied this subject, chiefly from a clinical stand-point. The following are the main points of his paper, as given by the *Archives of Pediatrics:* The younger the child the more difficult of diagnosis is pleurisy. The disease may be entirely overlooked without a very minute examination. After the exudate has formed the diagnosis is somewhat less difficult. Then the child breathes more superficially, there is a febrile movement and cough, which may last several days. The frequent and superficial respiration are the more important indications in making the diagnosis. If there is no exudation in the pleural cavity, the child will lie upon the diseased side. As to the physical signs, at first there is general bronchial respiration, gradually there is dulness on percussion and diminution of the respiratory murmur. Should the exudation be abundant the diagnosis may be readily made, but should it be limited to a small area at the base of the pleura the diagnosis will be difficult. The sensation which is yielded by percussion is believed to be of greater assistance in forming a diagnosis than the information which is obtained by auscultation. The prognosis of this disease among children is usually favorable. Thoracentesis will be necessary in case the exudation is not absorbed, and especially in cases in which it is so abundant as to occasion troublesome dyspnœa to the patient. Purulent accumulations rather than serous or serofibrinous ones cause trouble of this kind, and can usually be correctly diagnosticated in those cases in which an exudation persists longer than fifteen days, the temperature reaching 104° F., morning and evening, while the child steadily emaciates. The crucial test is, of course, an exploratory puncture. The treatment of purulent pleurisy by aspiration is not followed by the best results, for, in a few days, another deposit of pus has taken the place of the former one. The author believes that it is best treated upon the same principle which governs the treatment of abscesses. An incision, sufficiently large, is made between the fifth and sixth ribs, the pus is evacuated, a drainage-tube is introduced, and an antiseptic dressing applied. The patient is usually cured in from two to three weeks. Should the operation be deferred until an advanced period of the disease the pleural cavity must be washed out systematically with a solution of salicylate of soda or of thymol. Phenic acid solutions are dangerous, and numerous cases of poisoning have followed their use. Unless the operation is performed early there will be deformity of the thorax. If the purulent deposit is left to itself it may point somewhere upon the abdominal or thoracic wall, and will be revealed by swelling, fluctuation, and inflammatory œdema. In most cases of this character there is a fatal issue.

Nocturnal Cough in Children.—Sharp paroxysms of cough, which sometimes suddenly attack children at night when they are apparently enjoying the most tranquil sleep, are believed to be due to the accumulation of salivary and mucous secretions of the mouth, originating from a stomatitis or gingivitis which is associated with dentition. As the patient lies in the horizontal position the accumulated secretion tends to gravitate toward the epiglottis, the arytenoids, and even to the posterior commissure of the larynx. Thus the rich reflex nervous supply of this region is excited, and a cough, either convulsive or non-convulsive, is the result. During the day, when the child is in the horizontal position, the same conditions do not obtain. The same condition as to accumulation of secretions is seen in chronic and moist coryza. McCoy thinks that the paroxysmal cough in question is always the result of nasal catarrh, and is due directly to an irritant action upon certain zones of mucous surface in the nasal fossa, which were described by Hack, Mackenzie, and others. According to McCoy's explanation the vertical position enables the secretion to escape readily by the natural channels, while at night the dorsal decubitus prevents such a course.—*The Archives of Pediatrics.*

Quinine by Inunction.—It is often stated, and as often denied, that an ointment of sulphate of quinine and lard proves promptly efficacious in acute malarial affections. Those who affirm speak from experience, while those who deny the fact speak upon purely theoretical grounds. Liebreich is quoted as saying in a public address that Unna's experiments upon the relative affinity of different oils and fats for water determines the degree or capacity of such for cutaneous absorption. Hence it is argued that, as sulphate of quinia is very sparingly soluble in water, and not at all so in lard, an ointment made of these could not penetrate the dermis. After a tepid bath the ointment of quinia and lard may be rubbed into the skin of infants and others who are unable to tolerate any form of antiperiodic in the stomach, with promptly efficient results, theoretical objections to the contrary notwithstanding. The great discrepancies of opinion as to proper dosage depend, no doubt, upon two widely varying conditions: One as to the urgency of the demand for antiperiodic effects; the other as to the thoroughness with which all the details of the administration, in order to secure its introduction into the general system, are observed. Any form of inunction presupposes a freshly bathed surface for application, and any form of disease demanding quinia is sufficiently urgent to require enough of the drug to make its powerful impress upon the nerve-centres, as evinced in diuretic and diaphoretic stimulation. All the good effects, with the least of the bad effects of quinia, can best be secured in one full dose at night.—*Progress*, December, 1886.

Twenty Cases of Alexander Adams' Operation.—Dr. W. Gardner, in the *Australian Medical Journal*, October 15, 1886, publishes a series of twenty cases in which he performed the operation for shortening of the round ligaments. In no case did the operation result in death. The first case operated on was a complete failure, owing to imperfect performance of the operation, due to want of knowledge. Of the rest, one has been found to continue well three years after operation, two for a period of two years, seven for a period of one year, nine for a less period than one year. Four of them have been delivered of living children at full time. His method of operating and after-treatment is as follows: He draws out the ligaments from four to six inches, and always ties them together over a large pad of gauze. He also sews them carefully to the margins of the ring and to the skin. He uses very little sedative, and gives only ice to suck for the first twenty-four hours. Urine is allowed to be passed spontaneously to avoid the risk of cystitis. The first change of dressing is generally made on the seventh day; up to this time Lister's gauze

is used, and afterward iodoform and salicylic wool. The patient is allowed to get up and sit in a chair, or recline on a sofa, at the end of the third week, and is encouraged to walk after the fourth week has passed. No pessary or artificial support is used. He is inclined to believe that the operation will be found most beneficial in cases of chronic retroflection, with prolapse of one or both ovaries, the fundus being made to describe an arc of a circle which shall prevent it from pressing on the ovaries. It must also act beneficially by restoring the circulation in the broad ligaments to the normal condition. In anteflexion also it may be beneficial by straightening the uterus, and in prolapse also it will be of advantage, in cases which have resisted other methods of treatment. He inclines very strongly to the belief that displacements of the uterus are of no importance in themselves, and that they only give rise to trouble through the alterations they sometimes cause in the circulation through the broad ligaments. Therefore he does not operate because of the flexion, but only in cases where the flexion has caused alterations, probably in the circulation, evidenced by ovarian pain and reflex nervous manifestations.

FISSURES OF THE TONGUE.—In some persons, especially where gastric disturbances are present, the tongue suddenly becomes fissured all over, without, however, becoming coated, changing its color, or losing its moisture. Professor Schwimmer had the opportunity to experiment on some cases of this kind at his clinic. He tried chromic acid, which has been recommended by Vidal, and iodoform, which Dr. Unna, of Hamburg, has greatly praised, but in none of his cases did the tongues show any improvement. If anything, they became worse, especially under iodoform. As the patients were greatly annoyed by this morbid state of their tongues, the author tried a series of remedies in the hope of bringing about some alteration, but utterly in vain. Even Kaposi's treatment with nitrate of silver was useless. Some improvement was noticed after the application of soda solutions. Lactic acid, first employed by Schiff, gave the patients decided relief, and in one case almost established a cure. Finally Schwimmer used papayotin, and the result was surprising. In every case an amelioration was at once noticed, and within a few weeks a perfect cure was obtained. He applied the papayotin as follows:

℞. Papayotin..... 1 to 2 parts.
Aq. destill.,
Glycerin ..... āā 10 parts.

This solution is applied with a camel's-hair brush, from two to six times every day, after the parts have been previously well dried. The effect is not a macerating one, as one would think from the action of the drug on digestion, but it acts by stopping the pain in the parts deprived of their epithelium, and causes a renewal of the latter. In twenty-five cases, many of which were of many years' duration, a complete and permanent cure was established in all, with the exception of one, where a syphilitic dyscrasia existed, but where specific treatment brought about no result either. But even in this case a great amelioration was obtained.—*Wiener Medizinische Wochenschrift.*

FRACTURE OF THE BASE OF THE CRANIUM.—Frederick Hyde concludes his consideration of the above subject with these suggestions: 1. The anatomy and physiology of the base of the skull render its fracture more fatal, independently of their inaccessibility to direct surgical treatment, than when the lesion is restricted to the cranial vault. 2. The symptoms determining the diagnosis in basal fracture are caused by meningeal and cerebral lesion involving the origin of nerves or their continuity, often both, as well as lesions of blood-vessels. 3. While the displacement of fragments in this fracture is but little in the majority of cases, it will be more in the minority; and it is not uncommon, when the displacement is not detected in the outer table, that the inner will be comminuted and the fragments lodged in the subcranial tissues, with blood extravasation. 4. In the majority of examples of this fracture the symptoms of cerebral pressure are plainly marked; if not early, they appear only a little later, and yet so early as to prove that they are the immediate result of the injury, rather than from inflammatory products which appear later. 5. When the fracture involves the lower part of the parietal bone and the temporal with its petrous portion if compound, or only contusion of the part receiving the blow or force with marked symptoms of this fracture, an incision made at or over the site of the bruised scalp will aid in detecting the extent of the injury. 6. If fragments of bone or blood can be reached, remove them; and if there be slight or greater displacement, with positive symptoms of pressure which cannot be removed, then apply the trephine, elevate the depressed bones, and if there be blood remove it. 7. In this fracture, when caused by the direct application of force, as may be in the frontal sinus and in the proximity of the base of either fossa, with positive symptoms of brain-pressure, the hopeless condition of the case left to the expectant treatment, if there be no opening through the soft coverings of the bone at the point receiving the injury, warrants making an incision for exploration, that its cause may be better defined, and if it cannot be removed without, then use the trephine. 8. In all cases, if the operation of trephining is to be made, it should, as in vault fractures, be done at once after the receipt of the injury, to shorten the time of pressure upon the vital textures, and before inflammation has occurred.—*Medical Times.*

WHAT TO DO IN PUERPERAL ECLAMPSIA.—Dr. Clarkson, in the *Virginia Medical Monthly* (October, 1886), sums up his views on the treatment of eclampsia as follows: Encourage the attendants. Enforce quiet. Restrain your patience sufficiently to keep her from bodily injury. Place a cork between her teeth. Remembering that the whole surface of the body is in a condition of hyperæsthesia, make as few vaginal examinations as possible. Use the catheter only if there is distention of the bladder. At no time yield to the common suggestion to apply blisters to the nucha, or cataplasms to the calves. Evacuate the bowels by stimulating enemata. If there has been constipation, purge by calomel or croton-oil. Apply cold to the head, and remove hair if necessary. Mustard-baths to the feet. Do not dash cold water into the face. It may be done in hysteria; in syncope it is undoubtedly beneficial, but in eclampsia, Barnes says, "he has seen it provoke a fit, and knows it to be decidedly injurious." Give enemata of chloral and a bromide. Bleed only in decided plethora to relieve cerebral hyperæmia. Etherize, but not completely, except during a paroxysm. Keep your hands off your patient, save when necessary to perform some service, and then, if possible, do what is to be done under the cover of anæsthesia. The spasm over, prepare to empty the uterus. Puncture the membranes and leave the rest to nature. If nature refuses to respond, slowly dilate the os. Do not forget that the fingers in cone shape are the best dilators, and chloral their best assistant. Dilatation effected, deliver with the forceps for the head, or, in breech cases, by the feet. The uterus emptied, all unfavorable symptoms will vanish; if not, continue the chloral, the bromides, etc., as needed.

CREMATION IN DENMARK.—The Danish authorities have forbidden cremation on the strength of an old ecclesiastical law passed in 1685, according to which burial is prescribed as the only way to dispose of the dead. As a crematory has already been erected in Copenhagen the owners feel that they have a just cause of complaint that they were not earlier informed of the existence of this law.

THE MEDICAL RECORD:

A Weekly Journal of Medicine and Surgery.

GEORGE F. SHRADY, A.M., M.D., EDITOR.

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INHALATIONS OF COLD AIR IN TYPHOID FEVER.*

COLD air has been used to a limited extent for the reduction of elevated temperatures, but it has not found much favor among therapeutists, and has never attained the position among antipyretic agents that cold water has assumed. Yet, if we may rely upon some experiments made by Dr. Sokoloff, related in the *Journal de Médecine de Paris*, this would seem to be a remedy of no little power in depressing an abnormally high body temperature.

Dr. Sokoloff noticed that patients with typhoid fever who were treated in hospital tents during a season when the temperature at night would fall nearly to the freezing point were almost apyretic in the morning, although in the evening they might have a temperature of 104° F., or over. This observation led him to institute a number of experiments to determine the effects of the inhalation of cold air in fevers. He used the inhaling apparatus of Niemeyer, and gave three inhalations a day, of from five to thirty minutes' duration. The temperature of the inspired air varied from 16.5° F. to 26.5° F. Thirty-three patients with typhoid fever were subjected to these experiments, and from the results observed the author came to the following conclusions:

1. Inhalations of cold air cause a reduction of temperature, less marked, however, and less constant, than that obtained by baths of cold water, or even of cold air. The antipyretic effect varies according to certain conditions—(*a*) The time of day: the most marked depression of temperature was obtained when the inhalations were given in the early evening. (*b*) The stage of the disease: the most noticeable results were obtained after the second week, the fever at this time being often reduced 2° F., and remaining low for several hours. (*c*) The duration of the inhalation is not of much importance, though the best effects were generally observed when this had been prolonged over a period of about fifteen minutes. (*d*) The temperature of the inspired air: the most noticeable results were obtained when this was between 16° F. and 20° F. (*e*) The moral condition of the patient: in states of great mental depression or excitement the antipyretic action was much less marked.

2. Inhalations of cold air cause a reduction in the number of respirations of about four in the minute, and in the cardiac pulsations, of about six.

3. They diminish the unnatural dryness of the skin and mucous membranes.

4. They exert a favorable influence upon the bronchitis which so often complicates typhoid fever, and cause a more rapid exchange of gases in the lungs.

5. In consequence of this, they lead to an improvement in the general condition of the patient, and produce sleep.

6. The inhalations act as antiphlogistics upon the inflamed respiratory passages, and may be used with advantage in the treatment of chronic bronchitis, asthma, and emphysema.

The use of cold air as a therapeutic agent has been tried by Senator, Niemeyer, Rosenthal, and others. Traubenberg has made a number of experiments with cold-air baths, but considers them as inferior in value to baths of cold water. Sokoloff, in his experiments, never saw collapse induced, nor were there any other complications which could justly be attributed to the inhalations. The method, were it found to be really efficacious, would commend itself by its ready applicability, in winter at least, since air of the required temperature could at once be obtained from without, and there would be no necessity for moving the patient from the bed to the bath and back again, with its attendant risks.

The plan of treating patients with typhus fever in tents or open barracks was at one time extensively employed in this city, with very good results. And whether the good effects observed were attributable to the fresh air and thorough ventilation, or to the cold inhalations incidentally administered, is a question which might suggest itself. The method is probably not devoid of danger, especially as regards congestion and inflammation of the bronchial mucous membrane, and experience only can show whether the risks would be counterbalanced by the beneficial results obtained.

TEMPERANCE AND DRUG STORES.

KANSAS, among other things, enjoys the distinction of being a prohibition State. Its legislators have provided it with an enactment known as the "drug-store law." The Osage City *Free Press* has recently taken the trouble to investigate the working of this law, and to what extent prohibition prohibits under its salutary provisions. One of our leading dailies has shown its interest in the subject by some judicious editorial comment relative thereto. It appears that, in a general way, the law has been a great boon to the business interests of the druggist. The "saloon" still exists, but it has now assumed the more tempting guise of the pharmacy. To procure the coveted liquor the would-be consumer need not, as in some States, flourish a physician's prescription in the face of a perhaps unwilling clerk. The Kansas citizen dispenses with that empty formality, for the statute allows him to be the sole judge of his alcoholic needs and requirements. The local paper above named "has prepared a curious and strikingly significant table giving a full list of the purposes for which liquor was sold in that county during the month of June last. It is an extraordinary exhibit. Three hundred and fifteen different reasons for wanting liquor are given, and the majority of these are of a character to satisfy the reader that the assumption of medical

uses was the shallowest pretence. Thus we find people demanding whiskey for bilious headache; for a broken arm; for spinal complaint; for bathing; for chronic diarrhœa and chronic constipation; for congestion of lungs; for dropsy and heart disease; for a mysterious complaint styled 'dry stomach;' for epilepsy; for gravel; for inflammation of the kidneys."

The New York *Tribune* continues: "It is wonderful how the thoughtfulness of the Osage County citizens is developed by the drug-store law. The number of men who wanted whiskey for their wives, for their children, even for sick babies, is truly surprising, while the humanitarian spirit is further shown in the eagerness with which the same remedy was sought for the special benefit of sick cows, mules, colts, and horses."

The Kansas law-makers are doubtless gratified to perceive how completely the objects aimed at by their measure are fulfilled. On the principle of *similia similibus curantur*, whiskey is certainly a sovereign remedy for "headache." A refractory druggist may, perhaps, believe that "the remedy" is not invariably suited to the particular "disease" for which he sells it. But the law gives him no power to exercise his own discretion. So that the man who suffered from "indigestion of the lungs" got his "medicine" just as promptly as if he had pleaded the wants of a sick baby or a sick mule. "In fact, the table cited proves that, if the Kansas saloons have been closed, the drug stores have taken their place quite effectively, and that so long as the present drug-store law remains on the statute books nobody is in any danger of suffering from 'dry stomach.' The *Free Press* has done public service in compiling these interesting and unique statistics. They constitute a revelation, for they indicate that in a so-called prohibition State there has been enough liquor influence to enact legislation which practically knocks the bottom out of the prohibition policy of the commonwealth. Such a drug-store law as that of Kansas is in effect a free liquor measure, and this the table of the *Free Press* completely demonstrates. Anybody and everybody can procure all the liquor they want in any part of Kansas, the only change being that they have to get it from an apothecary instead of a saloon-keeper. Of course it is nonsense to discuss such a state of things as having any definite relation to a real temperance movement."

We have nothing to add to this quotation, except to emphasize the fact, attested by ample experience, that repressive legislation has hitherto given us no more real temperance, than attempts to extinguish prostitution "by law" has given us universal chastity. It may be discouraging to have to write this, but the evolution of "man" from "animal" has evidently not yet reached the high latitude of immunity from vicious propensities. Until that millennial period, however, it is to be feared that the experience of the Kansas law-makers will be from time to time repeated.

TUBERCULAR CONTAGION THROUGH THE MEDIUM OF CHICKENS.

It seems to be a fact pretty conclusively established that tuberculosis can be transmitted by milk and infected animal food of certain kinds, though examples of the latter method of contagion are not as yet very numerous. An instance of this nature, of considerable interest and not without practical importance, was recently communicated to the Société des Sciences Médicales de Gannat by Dr. de Lamallerée.

In a little hamlet of ten cottages, isolated in the midst of a large forest, and always hitherto free from any cases of tuberculosis, a young soldier returned home affected with pulmonary phthisis. His wife also became tuberculous and gave birth to a child who speedily showed evidences of hereditary tuberculosis. Another woman in the same hamlet presented in her turn the evidences of pulmonary phthisis. She had had no intercourse with the first cases, but had eaten of eleven chickens which had died in the yard of the soldier's house. The chickens were cooked very little before being eaten. The autopsy of another of the same flock showed tubercular lesions of the intestines, and the tubercle bacilli were found in great numbers. These chickens would thus seem to have been the means of conveying the specific virus, having themselves become tuberculous from eating the sputa from the affected individuals.

This observation possesses a threefold interest, as showing the possibility of transmitting the contagium of tuberculosis from man to man, from man to animals, and from animals to man.

News of the Week.

THE NAVAL MEDICAL SERVICE AGAIN.—The daily papers are taking up the complaints made about the United States Naval Service. There are ten vacancies in the grade of Assistant Surgeon in the navy, which have existed for more than a year. It is with the utmost difficulty that suitable young physicians are induced to enter the service. The Board of Medical Officers at Philadelphia, in its annual statement, says that of thirty-nine candidates examined for appointment as Assistant Surgeons, only seven proved successful. This year the Board has as yet done no work, but will examine several applicants on the first of next month. The Surgeon-General regrets exceedingly that the superior advantages offered physicians to enter the medical corps of the army, leave but few desirable ones from which the navy can choose. The pay of an army Assistant Surgeon, immediately upon entering the service, is that of a First Lieutenant of cavalry. In the navy it corresponds with that of a Second Lieutenant of infantry. In the army the new Surgeon has good quarters, while in the navy he is obliged to dwell in the steerage. Surgeon-General Gunnell deplores this condition of affairs, and intends to make it one of the first objects of his administration to place the medical corps of the navy on a footing with that of the army. We wish him every success.

DR. LUTHER M. KNIGHT died at Franklin Falls, N. Y., February 2d, aged seventy-seven years. He was born in Franconia, and graduated from Dartmouth Medical School.

DR. C. C. RICE.—The Trustees of the New York Post-Graduate Medical School and Hospital have elected Dr. Clarence C. Rice Professor of Diseases of the Nose and Throat, in the place of Dr. Clinton Wagner, resigned.

DECIDED MEGALOCEPHALIA.—The brain of the late Professor Edward Olney, of Michigan University, is stated to have weighed sixty-one ounces. This weight is rarely exceeded, the records giving not more than four or five instances. Abercrombie's brain weighed sixty-three ounces, and Schiller's the same.

THE WASHINGTON IRVING BISHOP PERFORMANCES.—Those who have seen Mr. Bishop perform his extravagantly advertised "mind-reading" performances will be astonished most, perhaps, to think that so much discussion has been excited by them. His tricks are, with hardly an exception, manifest examples of muscle-reading, and can easily be explained upon that theory. Mr. Bishop has undoubtedly an extraordinary muscular sensitiveness, which has been highly trained; but as for mind-reading, he does none of it.

A PRIZE ESSAY ON HAY-FEVER.—A prize of $25 is offered by the United States Hay-Fever Association for the best essay on hay-fever, its pathology, causes, and treatment. The essay is to be practical and non-technical. Manuscripts are to be sent to Samuel Lockwood, Freehold, N. J.

THE NEW YORK OBSTETRICAL SOCIETY has become semi-public, *i.e.*, its meetings are no longer to be held at the houses of the members, and outsiders, to a limited number, can attend on invitation of the members. We agree with the New York *Medical Journal* that the change is "certainly experimental," and we fear that the prestige of the society will wane.

THE NEW HOSPITAL FOR PHTHISIS AND INCURABLES, to be erected in this city at 144th Street and St. Ann's Avenue, will contain 250 beds and cost $150,000.

THE CELEBRATED GYNECOLOGIST, PROFESSOR SCHOEDER, recently died in Berlin.

NEW MEDICAL JOURNALS. — The *Foreign Medical Press* is the title of a new journal recently started in this city under the editorship of Mr. J. L. Stern. The *American Journal of Psychology* is announced to be edited by G. Stanley Hall, Ph.D., at Johns Hopkins University.

THE TALLEST MAN OF MODERN TIMES has recently been put on exhibition in London. His height is given as eight feet nine inches, which is about a foot higher than any other modern giant.

FOR CORNS AND BUNIONS an efficient remedy is equal parts of castor-oil and tinct. iodine. This is to paint on the part two or three times a day.

BEER AND HEALTH.—An alliterative organization, called the "Brewers' Benevolent Bureau" has instructed its physicians to examine 1,000 employees in the breweries as to their morbility, mortality, and general physical condition. These men drink three or four quarts of beer daily. Of the 1,000 only 2.5 per cent. were unsound, 7 having liver and 5 kidney disease, 1 heart disease, 1 phthisis. The death-rate was lower by forty per cent. than the average in an adult city population, and, altogether, the conclusion is to be drawn that the drinking of several quarts of beer daily is promotive of health and longevity. This is an instance, however, in which every-day experience quite overrides statistics.

SEXUAL PHYSIOLOGY AND MOHAMMEDAN WOMEN.—Mussulman girls are circumcised, says Dr. Zambaco, *i.e.*, have the clitoris removed at the age of seven. They menstruate, as a rule, at the age of nine or ten years. They marry, as a rule, at about this time, or even before, and the result is uterine disorder and a very small fecundity. Mussulman women have a horror of pregnancy, and abortions are common. Their whole life is centred about the sexual sense and its gratification, and the results are early maturity, slight fecundity, shorter duration of physical beauty and sexual life. Our esteemed but unwarmed contemporary, the *Boston Medical and Surgical Journal*, says: "The harem and the higher education may lead by widely divergent paths to a common goal, sterility."

THE EXCISE COMMISSIONERS have assigned the sum of $113,000 to be divided among the charities of this city.

A BILL TO EXEMPT HOSPITALS and other charitable institutions from paying the water-rates has been introduced into the State Legislature.

INTUBATION OF THE LARYNX, DESCENT OF TUBE, REMOVAL BY TRACHEOTOMY; RECOVERY.—Such is the history of a case reported by Dr. Joseph Eichberg, in the *Cincinnati Lancet and Clinic*. The tube did its work well, but when the symptoms had so improved that it was desired to remove it, the instrument, being of the old pattern, was pushed down and had to be removed by an operation.

TWO NEW MEDICAL JOURNALS have recently reached us, viz.: *Zeitschrift für Nahrungsmittel-Untersuchung und Hygiene*, a monthly journal published at Vienna, and edited by Dr. Hans Heger, and the *Centralblatt für Bacteriologie und Parasitenkunde*, edited by Dr. O. Uhlworm, of Cassel, and published by Dr. Gustav Fischer, of Jena.

THE DARK SIDE OF FLORIDA is said to be malaria and mosquitoes, both being more or less prevalent in most sections of that sunny State.

IN ACTIVE LAPAROTOMY of 347 gynecological cases presented to the Liverpool Hospital for Women, 167 were treated by abdominal section.

THE HOSPITAL SATURDAY AND SUNDAY FUND had, at last accounts, reached the sum of $50,304.07.

THE MICHIGAN STATE MEDICAL SOCIETY holds its next annual meeting on May 12 and 13, 1887, instead of in June, as was first announced. This change is to prevent any conflict with the American Medical Association, which meets June 7th to 10th.

PHYSICKING THE PAUPERS OF LLANFIHANGELRHOSYCORN.—A correspondent of *The Lancet* writes: "For the privilege of physicking the paupers of the parish of Llanfihangelrhosycorn and the adjoining parishes the guardians offer, forsooth, a salary of no less a sum than £30 per annum, and at the same time gently announce the acreage of the district. The area of the combined parishes is stated to be 34,700 acres. The advertisement calls to mind some lines of Albert Smith:

"'The parish is small—ten miles by sixteen,
With some commons and gravel-pits scattered between;
And respecting the cases, to state 'tis p'r'aps right,
That they always occur at the dead of the night.'"

Reports of Societies.

NEW YORK ACADEMY OF MEDICINE.

Stated Meeting, February 3, 1887.

ABRAHAM JACOBI, M.D., PRESIDENT, IN THE CHAIR.

AFTER the reading of the President's address, DR. JOHN H. GIRDNER was introduced, who read a paper and made a demonstration

ON DETECTING AND LOCATING METALLIC MASSES IN THE HUMAN BODY BY THE INDUCTION BALANCE AND THE TELEPHONIC PROBE.

The author first referred to the apparatus constructed by Professor Bell for detecting the bullet in President Garfield's case, an experiment which failed because of the haste in its preparation, and because the patient was lying upon a metallic mattress, unknown at the time, which interfered with the proper working of the instrument. Dr. Girdner said that now, however, we have before us a perfected apparatus, one which will detect and locate any piece of metal, wherever situated in the human body. It would prove particularly useful in times of war. The second apparatus, which he ventured to name the telephonic probe, was also the invention of Professor Bell, and was useful in connection with the induction balance, as by it the exact distance to the ball could be determined.

In the construction of the induction balance a bichromic battery was used, with six cells, and an ordinary interrupter, the interruptions being about six hundred to the second. The exploring coils were put in a framework of wood, which he called the explorer, while to the others the name adjusting coils was given. Thus in the primary current were two coils, in the secondary current were also two coils, and in the circuit was a telephonic receiver. When the exploring coil was not in relation to a metallic substance there was silence in the telephonic receiver, but as the explorer approached or receded from the metallic mass the balance was disturbed, producing a musical tone in the receiver. The sound was distinct a distance of six inches from the metal, if located in the human body; a less distance if the intervening space was occupied by air or an inorganic substance.

The telephonic probe consisted of a telephonic receiver and two wires, one terminating in a long, slender steel probe, and the other being connected with a steel plate laid over the surface of the body in the neighborhood of the metallic mass, as determined by the induction balance. The steel probe being now plunged into the body (the surface having been first rendered insensitive by cocaine), as soon as it reached the metal a distinct click is heard. The practical working of the first instrument was demonstrated upon a man in whose chest a bullet had become lodged during the civil war, and of the second, upon a piece of beef into which a mass of lead had been placed. The President was also able to discover with it a quarter of a dollar in one of his pockets.

DR. NEWTON M. SHAFFER then read a paper on

THE USE OF CONTRACTION IN THE TREATMENT OF CLUB-FOOT, WITH A CONSIDERATION OF SOME OF THE MECHANICAL PRINCIPLES INVOLVED, AND A DESCRIPTION OF THE ANTERO-POSTERIOR AND LATERAL TRACTION APPARATUS.

The paper was supplementary of one previously published in the MEDICAL RECORD. Numerous diagrams were presented, showing the mechanical principles involved in motion at the ankle-joint in health, and it was a return to this state for which treatment was instituted in club-foot. The author claimed that there was only one antero-posterior centre of rotation, and that is not at the ankle-joint, but below it. The direction of the heel in flexion of the foot is downward and forward, and of the toes forward and upward. These principles should be carried out in any apparatus devised to overcome club-foot, but, in fact, the apparatuses employed ordinarily act on principles quite opposed to those which we see in nature. For instance, instead of being constructed and applied in a manner to push the heel downward and forward, and to bring the toes upward and forward in overcoming talipes equinus, they make direct traction upon the toes, fix the heel in a manner to prevent it from going downward and forward, and indeed, by the force exerted upon the toes, tend rather to bring the heel in the opposite direction, namely, backward and upward. His own instrument, based upon the principles seen in the action of the healthy foot, was then described, and also the one intended to overcome varo-equinus—instruments which he had greatly improved since his last publication. He rarely found cases which did not conform to traction treatment, and still more rarely those which did not yield to tenotomy and traction combined.

DR. RIDLON said that, after six years' experience, he was unable to obtain as good results from the lateral shoe as were obtained by Dr. Shaffer. There were certain cases in which good results could not be obtained by traction, by whomsoever applied, and he thought we ought to be able to distinguish those cases from the beginning. One indication was a sensation of shivering or shudder passing throughout the patient's entire system when the foot is placed upon the stretch.

DR. KETCH said it ought not to be forgotten, in applying Dr. Shaffer's method of treatment, to employ traction intermittently. Relapses after tenotomy were common, and the usual so-called after-treatment was rendered much less by the use of traction with Dr. Shaffer's apparatus. He had been much gratified with the results of the lateral extension shoe.

DR. JUDSON remarked that, inasmuch as Dr. Shaffer's apparatus was capable of exerting a great deal of force, he thought it should be in capable hands. He would say, but not as a restriction upon the paper, that proper treatment instituted very early ought to do away with the necessity for an operation or apparatus.

DR. SHAFFER closed the discussion, and expressed some surprise that Dr. Ridlon had found the use of his lateral traction apparatus difficult. In fact, the parents could regulate it after a few visits by the physician. It should be made to fit in the first place, and the treatment should not be hastened. Some of his best results had been obtained in cases in which Dr. Ridlon thought tenotomy was indicated, namely, pain and a shudder passing through the system on making traction with the shoe.

The President was chosen as one of the committee to consider the question of an eligible building site for the Academy, the other two, consisting of Drs. George A. Peters and F. A. Castle, having been named by the council and trustees.

In March the following resolution will be voted upon:

Resolved, That the trustees and council be and are empowered to purchase a site or building, or erect a new building, for the Academy when such a course shall be considered expedient.

VACCINATION IN CHINA.—The Chinese have, from time immemorial, made a practice of inoculating small-pox; but as those inoculated are not isolated but mingle freely with others, the result is that the disease is spread only the more widely. They have of late, however, been adopting vaccination very extensively, and it is now not at all uncommon to see notices posted in various parts of the cities informing the public where they may take their children to have them vaccinated.

NEW YORK PATHOLOGICAL SOCIETY.

Stated Meeting, December 22, 1886.

JOHN A. WYETH, M.D., PRESIDENT, IN THE CHAIR.

DR. W. H. PORTER presented, in behalf of a candidate, a set of specimens, consisting of the brain, which showed marked thickening of the pia mater; the liver, which was atrophied, and the kidneys, which were cirrhotic.

DR. WESLEY M. CARPENTER presented, in behalf of a candidate, a specimen of *cystoma* of the ovary, with pyosalpinx.

PULMONARY SYPHILIS.

DR. W. H. PORTER presented two lungs which illustrated syphilitic phthisis. In one there were at the apex two small nodules, which he regarded as gummata. The case was one of acute alcoholism, and the patient died of lobar pneumonia, beginning in the apex of the other lung. The peculiarities of the gummatous formations are that they are sharply defined, have a distinct fibrous capsule, and a cheesy centre, which, after a time, break down and ulcerate into the bronchial tubes and ultimately form cavities. Absence of tubercle bacilli is also an important fact, as well as absence of rise of temperature.

The other lung showed the same lesion more extensively, and contained neither tubercles nor tubercular tissue. It was taken from the body of a man who had been in the hospital for some time, and although both lungs were infiltrated with the process throughout almost their entire extent, and contained numerous small cavities; the patient had neither elevation of temperature nor cough with copious expectoration.

Dr. Porter had found the bacillus of syphilis, described by Lustgarten, in twenty-three per cent. of the specimens examined, and in the same specimens had failed to find the tubercle bacillus. The syphilitic bacillus had been particularly abundant in the centre of the nodules.

In answer to a question, he said that he would distinguish the syphilitic lesion from pneumonic phthisis by the distinct capsule surrounding the nodules and the formation of a large amount of interstitial tissue. In that case, also, the presence of Lustgarten's bacillus would be an important fact.

DR. H. J. SCHIFF presented a specimen of

SYPHILITIC EPIDIDYMITIS

with the formation of abscess. J. A——, twenty-seven years of age, single, and a liquor-dealer, had always been healthy except for his various venereal troubles and their sequelæ. Ten years ago he had a sore on the upper part of the penis that left a cicatrix as large as a silver quarter of a dollar. He came to Dr. Schiff thirteen months ago with almost complete retention of urine, who, with difficulty, introduced a filiform bougie, and finally, at the end of two months, was able to introduce a No. 22 French. Two months later the patient had right epididymitis following gonorrhœa, which so yielded that within a few weeks treatment was discontinued. About three months after the beginning of this attack he had another attack of epididymitis on the right side, following a fresh gonorrhœa. This yielded to treatment in eight days.

Eight days subsequently he came to Dr Schiff with a typical initial lesion of syphilis, and said that he had not had sexual intercourse since his last attack of epididymitis. Dr. Schiff concluded that the patient was doubly infected five weeks before. This was on August 24th. He applied a solution of bichloride of mercury, 1 to 1,000, and the sore healed in eight days.

On October 2d the patient came with secondary roseola. Mercurial inunction was begun. On November 1st there was commencing alopecia, besides large raised condylomata around the anus and scrotum. He also had mucous patches in the throat. The mixed treatment was prescribed, and the condylomata were painted with a solution of bichloride of mercury in ether—1 to 60.

November 10th he had retention of urine, was placed in bed, and had sounds passed until November 27th, when the urethra would receive a No. 26 French. During this time he took no medicine and felt fairly well.

On December 11th the right side of the scrotum was swollen, and the epididymitis enlarged but not very painful. The mixed treatment with evaporating lotions was prescribed.

December 19th, scrotum much enlarged and fluctuating. Severe pain of a burning character, and aspiration revealed pus. On December 21st Dr. Schiff made an incision, evacuated about six ounces of pus, found the epididymis much enlarged, and he could squeeze pus from places where it was broken down. He extirpated the testicle.

The specimen showed an enlarged and hardened epididymis, with softening in spots, which yielded pus on pressure. It was interesting as an illustration of the rapidity with which syphilis may run its course.

DR. H. J. BOLDT presented two specimens of

PYO-SALPINX,

interesting chiefly on account of the fact that the pain of which the patients complained was referred to the side opposite to that with the diseased appendage; also the disease was well-marked upon one side, while on the other the organs were apparently perfectly healthy.

The *first* was from a patient, eighteen years of age, married, and the mother of one child; no miscarriages. Menstruation began at the age of thirteen. For five months the patient complained of intense pain in the left inguinal region, backache, and cephalalgia; bearing-down pain on micturition; metrorrhagia and profuse leucorrhœa.

Diagnosis of probable pyo-salpinx on the right side because on admission to hospital the patient's general condition was very poor and accompanied by some fever and the right ovary and tube were enlarged and prolapsed. On the fourteenth day after the operation the patient left the hospital apparently well.

The *second* was from a married woman, thirty-three years of age, who had had three children and four miscarriages. The last child was born six years ago. Menstruation appeared at the age of fourteen. There was a history of gonorrhœa. For the last four months she had had intense backache, and abdominal pain of the bearing-down character, menorrhagia and metrorrhagia, intense pain in the left inguinal region, running down the corresponding thigh and leg, and profuse leucorrhœa. On opening the abdomen there was found, besides a papovarian cyst and a cyst in the broad ligament, a suppurating ovarian cyst, which ruptured, and the adhesions were so firm that the use of a drainage-tube was necessary. The patient was doing well.

DR. BOLDT also presented

A URETHRAL CALCULUS

removed from a boy, fourteen years of age, who gave the history of an illness beginning in 1875. At first there was difficult micturition, the bloody-colored urine escaping only by drops, with marked tenesmus. He went to Roosevelt Hospital, where he remained three months and returned as incurable. In 1877 he began to have epileptiform convulsions. In 1878 he was admitted to Bellevue Hospital, where he was circumcised, but no relief was obtained, and his condition remained, after removal from the hospital, substantially unchanged up to December 19, 1886, he having been, in the meantime, under the care of several physicians. When Dr. Boldt first saw the patient he had a continuous desire to micturate, was pale and weak, but was able to pass his water only in drops. The meatus urinarius was unusually small, and this Dr. Boldt at first thought was the cause of all the trouble. But he discovered a small mass, apparently in the urethra, near the root of the penis, and was able to work it forward slowly until it was near the

meatus, which he then divided freely, and the calculus was removed. Could the calculus have been in the bladder near the urethral opening, and there remained without change of position, and caused all the symptoms for which he had been treated, or had it been in the urethra, where it steadily increased in size? He was inclined to the opinion that it had been from the beginning a urethral calculus.

Dr. Amidon presented a specimen of

CARCINOMA OF THE SPINE,

with the histories of two other cases of malignant disease of the spine—one being sarcoma. He regarded the cause of the pain, from which these patients suffer, as filling up of the intervertebral foramina with the new growth. There were small nodules of the malignant disease in the liver in the first case, and it had been a question whether or not the carcinoma of the sacrum and other portions of the spinal column was primary.

Dr. Mendelson said that the case was very similar to one which he saw two years ago. There was a history of injury in September, and in December the patient began to suffer from pain in the middle dorsal region, and intercostal neuralgia became the chief symptom. Finally the diagnosis of caries of the spine was made, although there was no deformity, and only slight tenderness on pressure. The patient grew worse steadily, symptoms of pressure myelitis developed, and he died six months afterward. At the autopsy a tumor was found within the spinal canal, extending from the body of the third to that of the fifth dorsal vertebra, which, by pressure, had produced great thinning of the cord. The bodies of the vertebræ were more or less involved, and there were extensive deposits in the lungs, so great that the diseased exceeded by far the normal tissue. About one month before death the diagnosis of tumor pressing upon the cord was made, because of a secondary deposit which appeared just above the sterno-clavicular articulation on one side, and there were deposits also in the skin. The case was interesting, especially with reference to diagnosis. At no time was there any deformity, although the bodies of the vertebræ were found extensively diseased; but the lack of deformity was attributed to the fact that the patient was most of the time in the horizontal position upon a water-bed.

Dr. Prudden thought that the small size of the nodules of malignant growth in the liver did not necessarily exclude the idea that they were primary, and the disease in the spinal column secondary. Primary carcinoma of the bones, it was generally conceded, occurred very rarely, and even its occurrence at all was doubtful. It was also well established that secondary malignant disease frequently progressed much more rapidly than the primary.

Dr. Prudden further remarked, concerning

THE EPITHELIAL ORIGIN OF CARCINOMA,

that two practical objections had frequently been urged to the acceptance of the view of the exclusive epithelial origin of carcinoma, namely, the occurrence of so-called primary carcinoma of the bone, and primary carcinoma of the peritoneum, pleura, and pericardium.

In regard to the apparent occasional exceptional occurrence of so-called primary carcinoma of the bone, it may be said that they are becoming less and less frequent as autopsies are being more carefully made, and nothing but the most complete examination of every part of the body in which primary cancer is wont to occur can justify the anatomical diagnosis of primary bone cancer. If such cases do occur, they may be explained on Conheim's theory of displaced embryonal remains. But the most serious objection, after all, to a belief in the exclusive epithelial origin of carcinoma, has been its not infrequent occurrence in the peritoneum and on the pleural and pericardial surfaces, because it has long been an accepted view that the great body cavity, which later became divided into the peritoneal, pleural, and pericardial sacs, was formed by a split in the mesoblast, was lined with true endothelium and hence was a connective-tissue structure. Recent researches, however, especially those of His and Waldeyer, and these were in a measure confirmed by Balfour, have shown that the great body cavity is not of connective-tissue origin at all, but is originally formed by diverticula from the gastro-intestinal canal, and is thus lined with true epithelium. This epithelium at a later period becomes greatly flattened, and has the appearance of the true endothelium, such as is found in the blood- and lymph-vessels. The analogy of the peritoneum with the lymph-vessels has seemed to find a justification in the free connection of the two by means of stomata; but the stomata are of late development after the peritoneal epithelium has changed its characters.

These considerations thus afford a most satisfactory explanation of the occurrence of primary carcinoma of the body cavities, which is no longer an exception, and no longer an argument against the exclusive epithelial origin of carcinoma. On the contrary, it affords a most excellent and striking example of the tendency of cell growth in tumors to reproduce the embryonal type.

Dr. W. H. Porter had examined the specimens in two cases of extensive disease of the lumbar vertebra, supposed to be cancerous, but it was found that the disease was sarcoma. There were also extensive deposits in the liver, lungs, spleen, etc. It seemed to him that where diffuse growths were found with disease of the spine they were likely to be sarcomatous rather than carcinomatous.

Dr. Amidon said that in one of the three cases he had reported the disease was sarcoma, but the specimen just presented had been examined by Dr. Frank Ferguson, who reported that it was carcinomatous. There were two facts of which he wished to speak, and the first was tenderness. Many, if not most physicians, argue against organic disease when there is no spinal tenderness, as much as they do for it when the tenderness is prominent. When the spine is excessively tender it is generally regarded as functional. But in all the cases of malignant disease of the spine which he had seen, and he had seen several, decided tenderness on deep pressure had been present. This point was brought to his attention particularly by a case which he saw in consultation at St. Luke's Hospital. A negro girl, twelve years old, had gradually increasing and painful paraplegia. He found a trifling knuckle in the lower dorsal region that was excessively tender, as was also the entire spine. She had been treated by an orthopedist, who argued against malignant disease of the spine because of the fact that it was so tender. The child died, and it was found that the disease involved the bodies of the vertebræ and was tubercular in character. Dr. Amidon thought that it could be said with safety that organic diseases of the spine are not necessarily insensitive to pressure, but are sensitive to deep pressure.

Another point was the extremely long period of latency in some cases. There might be a history of painful affection of the spine, extending over several years. According to his experience these cases have a long latent period, which was very apt to mislead one with regard to the true pathological condition present; malignant disease elsewhere being usually a rather acute process.

The President said that he removed a cancerous breast last March, and three months after the operation symptoms of metastasis occurred in the lumbar vertebræ. There was kyphosis between the seventh and ninth dorsal vertebræ, but there was no tenderness on pressure, and still the patient suffered the most agonizing pain from pressure on the intervertebral disks. There was no paraplegia or paresis. Dr. Janeway saw the patient, and diagnosticated metastasis to the spinal column, and said that he had seen two cases with similar symptoms.

Dr. Van Santvoord reported at the meeting, January 12, 1887, that Dr. Wyeth's patient is now suffering from pain along the eleventh and twelfth intercostal nerves; also pain along the distribution of both anterior crural and sciatic nerves, which dates to a period anterior to the removal of the breast. At the time the breast was removed these pains were regarded as neuralgic, but probably were due to organic changes in the vertebræ, thus sustaining Dr. Amidon's belief that malignant disease of the spine may remain latent for a long time.

The Society then went into executive session.

Correspondence.

OUR LONDON LETTER.

(From our Special Correspondent.)

PHOSPHATIC DIABETES — THE SUTURE OF DIVIDED NERVES—PHYSIOLOGICAL EFFECTS OF MASSAGE—A NEW OPERATION FOR IMPERFORATE ANUS—A GENERAL SPECIAL HOSPITAL—SIR JAMES PAGET'S PRESIDENTIAL ADDRESS AT THE PATHOLOGICAL SOCIETY—TRUE LIPOMA OF HEART—SPONTANEOUS DISINTEGRATION OF A VESICAL CALCULUS—BURMESE MIDWIFERY —THE HIGHER EDUCATION OF WOMEN—A CURIOUS LEGAL CASE—THE WILSON BEQUEST—THE NEUROLOGICAL SOCIETY—A NEW YEAR'S CARD.

London, January 19, 1887.

The last week's society meetings have been full of interest. The more important subjects under discussion have been phosphatic diabetes, the suture of divided nerves, and the physiological effects of massage. At the Medical Society of London, Dr. Ralfe, long favorably known for his researches on urinary chemistry, read a paper on phosphatic diabetes. Particulars were given of thirteen cases. The cases were arranged in groups, according to the classification of Professor Teissier. All but two of the patients were young adult males. The symptoms in all were emaciation, aching pains in the loins and pelvis, dry harsh skin, tendency to boils, ravenous appetite, and, in some cases, cataract. In most of the cases there was polyuria; in others the urine was normal in quantity, but with a high specific gravity. The urea was increased—in some cases slightly, in others considerably. In all the cases the phosphoric acid eliminated was considerably—and constantly—increased in amount. Dr. Ralfe thought that the increased elimination of phosphoric acid did not depend so much upon increased metabolism of nervous matter as upon defective nutrition. When it was associated with nervous derangements or phthisis, respectively (Groups 1 and 2 of Teissier), the prognosis was unfavorable. When alternating with saccharine diabetes (Group 3), or running a distinct course by itself (Group 4), the outlook was much better. Two cases under Group 3 had got well. For measuring the amount of phosphates discharged he employed volumetric analysis, uranium nitrate being used to precipitate the phosphates. Care must be taken to use a specimen of urine from the mixed urines of the twenty-four hours.

At the Medical and Chirurgical Society an animated discussion on the suture of divided nerves followed the reading of a paper on the subject by Mr. J. Bland Sutton. Mr. Sutton maintained that by following the rules which had been gained by studying the effects of neurotomy in horses, the ends of the divided nerve could be found with ease, and then sutured. In horses, after the experimental performance of neurotomy, he had found a delicate fibrous band present, uniting the divided ends. Mr. Holmes doubted the general existence of this band, an opinion shared by Mr. Bowlby. The latter remarked that in cases where the injury was an old one, it was evident that not only the nerve, but the muscle, had to be remade. The first sign of restoration was a return of voluntary power; this might precede the return of electrical reaction by many months. He was convinced that the lower end of the nerve could be regenerated without being brought into contact with the upper end of the divided nerve. Thus it might happen that union of divided ends, even after a long time had elapsed, would be followed by very rapid return of function. Mr. Hulke asked what we were to do if the divided ends were so widely separated as to render it difficult, if not impossible, to bring the divided ends together? German surgeons had united them by pieces of sciatic nerve from sheep and dogs, and apparently with success. A method of side-splitting the nerve and bringing one piece down to fill the gap had also been used. Cylindrical decalcified bird's bone had also been tried. Mr. Warrington Haward remarked on the great variation in the time that elapsed between operation and restoration of function.

An interesting paper on Massage, by Mr. Symons Eccles, was then read. Mr. Eccles had made a number of experiments on healthy persons as to the effects of massage. He described four distinct manipulations, viz., *effleurage*, *pétrissage*, *massage à friction*, and *tapotement*. Massage was a combination of these, and its immediate and remote effects were that the texture of the skin was improved, the sense of locality increased, and the general temperature of the body raised. The surface temperature of a part under massage was higher than that of the rest of the body, while abdominal massage reduced the temperature of the extremities. A course of massage of one month increased the body-weight, the appetite, muscular strength, and ability to eat and sleep well. Dr. Hermann Weber remarked that medical men should themselves superintend the treatment. Dr. Playfair observed that he had taken more interest in the forms of the disease for which it was useful than in massage itself. As a remedial agent in neurasthenia it was most important. Many patients put on several pounds a week, and he had known the body-weight to be doubled in six or eight weeks. In a case of destructive disease of one lung eighty-four pounds in weight were gained in a few weeks. He believed that any hysterical appetite could be made by this treatment to eat, assimilate, and digest more than a Lifeguardsman could in the same time. Dr. Douglas Powell remarked on the necessity for medical supervision, and said he had known a nurse induce hæmaturia by rubbing, contrary to order, an abdominal tumor. Dr. Arthur Gamgee said there was a difficulty in acquiring all the methods. To treat infantile paralysis or scrivener's palsy by massage a thorough anatomical education was necessary. Massage could modify the condition of internal organs.

At the Clinical Society the most noteworthy paper was one by Mr. Mayo Robson, of Leeds, in which he suggested a new plan of treatment for certain cases of imperforate anus. Where the bowel could not be readily reached from the perineum the recognized treatment had been, he said, to perform either Littré's operation or colotomy. But in such cases the mortality was very heavy. Mr. Robson advocated making an incision from the central point of the perineum to the coccyx, and then a careful dissection until either the bowel be reached or the peritoneum opened, when the upper end of the rectum or the sigmoid flexure of the colon could be brought down and sutured to the skin in the anal region. Mr. Robson described the case of a child of a day on whom he had performed this operation last March. The child recovered without a bad symptom, and when last seen the anus appeared normal and there was a daily motion. He considered the operation not difficult if a catheter were passed into the bladder and a good horizontal light was available. Mr. Harrison Cripps criticised Mr. Robson's statistics, and said that he had collected a hundred successful cases of Littré's operation. He had himself had five successful cases out of sixteen. Where no sign of

an anus could be found he remarked that the results of operations were much more favorable than when some trace could be seen, as the malformation was often more serious in the latter case. He preferred Verneuil's operation of resection of the coccyx without opening the peritoneum.

We are threatened with another hospital in London in commemoration of the Queen's jubilee. Yet those already existent are languishing for want of funds, and in some the wards have been partially closed. The new institution is to be a special hospital *devoted to all the specialties*, and is to be located in the aristocratic neighborhood of South Kensington. That such a hospital can really be needed no well-informed person can for a moment suppose. To say that it is being started as a commercial speculation in the interests of certain medical men would probably not be far from the truth!

LONDON, January 26, 1887.

On Tuesday last Sir James Paget delivered his inaugural address at the Pathological Society on assuming the presidential chair. He observed that it was characteristic of modern pathology that it offered work sufficient for the employment of nearly every variety and opportunity of the scientific mind. There was in it work not only for the anatomist and physiologist, but for the clinical observer, the experimentalist, the minutest microscopist, the statistician, the chemist, the naturalist, the historian, the psychologist, and yet more. Of all these methods of study, Sir James Paget remarked that there were only two with which he had been much occupied—those of pathological anatomy and of clinical pathology in active practice. We might justly believe, he said, that practice and pathological anatomy, if studied with the scientific mind and methods, would still contribute largely to the progress of the whole science of pathology. We heard science and practice spoken of as in opposition, and sometimes as if they were mutually distrustful. That practice might be depended much more on the person engaged in it than on its own subject-matter. It might be for one a noble profession; for another a mere trade. In equal contrast it might be a mere useful art practised by one who had neither love nor knowledge of any science, or to the man of scientific mind it might be a thoroughly scientific study as well as an applied science. As examples of scientific researches made in active practice were instanced those by which Bright attained the knowledge of the disease bearing his name, and Jenner's discovery of vaccination. As to the latter, we must observe that Jenner was a thorough naturalist, trained by John Hunter. Practice, said Sir James Paget, was full of opportunities for science. He suggested one group, viz., the action of specific medicines, such as that of quinine in malarial diseases, of mercury and of iodide of potassium in syphilis, of arsenic in many cases of psoriasis, or of bromide of potassium in some cases of epilepsy. These were sure facts, but among these empirical facts modern scientific work in practice might win great riches in pathology. For the medicines he had named were not only remedies, but diagnostic tests, and we might guess that each of them detected the presence of some material belonging only to the disease which it cured. There, then, was work for the scientific practitioner. He might find the material and more, if he would observe the facts in practice more minutely, and record and collect them, and bring to bear upon them as much light as possible from other sections of pathological science. They would yield more knowledge, and his practice would be promoted to a better title than "empirical."

The fact pointed out by Dr. Bright, that there was a form of dropsy always associated with disease of the kidneys, was accepted at first as a singular fact and nothing more. It would be difficult to tell now into what, in fifty years of scientific culture, that singular fact had grown. Could any fact stand more alone than did that of the use of vaccination as first observed by Jenner? Now it might be honored as the first knowledge attained in all that wide range of knowledge in which Pasteur's great work had been done, and to which Power and Klein had lately annexed their admirable discovery of the true source of the milk scarlatina. There were many more of this group of the facts of which we had better knowledge in practice than we had in morbid anatomy or any other section of pathology. As instances, Sir James Paget referred to predispositions to disease, functional diseases, sequelæ to certain diseases, and hybrid morbid conditions. The best way to remedy these defects was by study and minute scientific work in practice. It could be proved by the example of other sciences that the more minute the inquiries, and the facts obtained by them, the more sure and complete would the fusion of pathology become with the whole body of biological science, and the more would it thence gain. Whenever possible, minute microscopical examinations should be made upon the living as well as on the dead morbid structures. He uttered a warning suggested by the word "structureless." It suggested that we had really reached a boundary, that something was really structureless, or that there was a protoplasm which was the same always and everywhere, at least in the same species. The protoplasm in every structure, he remarked, must be essentially different from that of every other, and these differences would be discovered by our successors if we did not discover them. At the same meeting of the Pathological Society, Dr. Handford showed a specimen of fatty tumor of the heart, and said there was no satisfactory example of a true lipoma of the heart in any of the nineteen principal museums in the kingdom. There were only three doubtful specimens, two of which were probably examples of fatty overloading, and the third was classed among "tumors of doubtful origin."

Dr. Ord showed some fragments of a vesical calculus which had been passed per urethram as the result of spontaneous disintegration. The patient was a gentleman aged seventy-five, who had for six years past had both sugar and albumen in his urine. Large crystals of free uric acid were also passed. The fragments passed consisted of free uric acid and urate of ammonia.

Obstetricians have been greatly interested by a paper read by Dr. Pedley, of Rangoon, at the last meeting of the Obstetrical Society. The subject of the paper was the Burmese and their customs, especially in obstetric matters. Midwives were employed who were of low class and ignorant, and the more decrepit with age they were the more were they respected. As among some other uneducated nations, every method was used to exclude air from the lying-in chamber, in which also a wood fire was lighted and, there being no chimney, the smoke filled the room. Abdominal pressure was employed throughout labor. A silk scarf was also tied tightly round the body above the umbilicus, and drawn tighter as the case proceeded, their idea being that it prevented the uterus from rising into the chest. In all first cases the midwife tore the perineum, either with her thumb-nail, which was grown sharp and long for the purpose, or with her great toe-nail. After delivery of the child, if the placenta did not follow quickly, the cord was dragged on, and, if this failed, the placenta was removed by the hand or torn away piecemeal. The mother was washed, the whole body rubbed with turmeric, and saffron plastered over the vulva. The fire was kept up, and hot bricks wrapped in rags, or bags of hot sand, placed on the abdomen, and twice a day the patient squatted over smouldering embers upon which turmeric had been thrown, or over steam arising from hot bricks. The skin was often blistered, but heat was supposed to heal the parts. When delivery was delayed, various barbarous methods were used, such as standing on the abdomen or placing a bamboo or plank across it, and pressing on each end. These methods were very fatal. Burmese women really needed but little assistance if left to nature, as their pelves were

roomy, and expulsive efforts strong. The Burmah branch of the "Countess of Dufferin's Fund" had determined to undertake the supply of properly trained native midwives.

In Dr. Langdown Down's recent Lettsomian Lectures, he touched on the recent controversy as to the higher education of women, started by Dr. Withers Moore's remarks on the subject in his presidential address at the annual meeting of the British Medical Association at Brighton, in August last. Dr. Down is not one who sees danger in every form of higher education. He said women should be made fit to be not only "mothers of men," but also companions and helpers of men. At the same time he does not approve of over-pressure, and uttered a warning as to the danger of cultivating too much the "emotional side" of woman's nature.

A curious case has been occupying the attention of the law-courts for some days, and was decided yesterday. A gentleman, while dining at a restaurant off some quails and chopped spinach, felt something stick in his throat. This ultimately proved to be a threaded needle, as after passing down and causing an ischio-rectal abscess, it was recovered. A fistula resulted, and two operations were performed. He brought an action against the restaurant keeper, but has been non-suited.

The Wilson bequest is still exciting much interest at the College of Surgeons. No decision has as yet been arrived at.

Dr. Wilks is to be the new President of the Neurological Society.

The following announcement appeared a few days ago in the advertising columns of a daily paper: "A medical practitioner of high standing in the West End of London has received, in the form of a New Year's greeting, the following: 'Asses can be hired or bought.' He begs to say that the Ass that sent it is SOLD."

OUR PARIS LETTER.

THE POSSIBILITY THAT THE SO-CALLED PREVENTIVE TREATMENT FOR HYDROPHOBIA MAY ITSELF ORIGINATE THE DISEASE.

PARIS, January 14, 1887.

PASTEURISM has taken an unlucky turn of late, for certain circumstances have been brought to light which are anything but favorable to the method, and that by men who are not necessarily adversaries to it, but who are earnest investigators, in common with the illustrious biologist who has given his name to the method, for the well-being of humanity. Professor von Frisch, of Vienna, has, after having performed several experiments with the virus of rabies supplied to him by M. Pasteur, come to the following conclusions: "Most of the animals which were submitted to the preventive treatment after subcutaneous inoculation with street rabies, died of the disease even when the period of incubation was thirty-four days. The experiments, according to M. von Frisch, show that M. Pasteur's method of rendering animals refractory to rabies is not yet proved to be quite certain. There is not yet a sufficient scientific basis for the application in man of a preventive treatment after the bite of a rabid animal." But the most appalling reflection suggested by von Frisch, is "the possibility that the preventive treatment, or, at any rate, the intensive method recently adopted by M. Pasteur, may itself transmit the disease." A case lately brought to the notice of the Paris Academy of Medicine by Professor Peter would seem to afford grounds for such a hypothesis. It was that of a young man, aged twenty, who was bitten, about the beginning of November last, by a dog which, recognized by a veterinary surgeon as being mad, was killed. Two days after the patient went to M. Pasteur's laboratory in the Rue Vaquelin, where the inoculations, according to the intensive method formulated by M. Pasteur, were performed in the hypochondriac region. Three inoculations were practised daily for twelve consecutive days, the first having been commenced on November 2d. The patient's health remained perfect to December 12th, when he experienced for the first time a premonitory symptom of considerable importance, viz., pain originating *from the points where the antirabic inoculations had been practised*, and not from the cicatrix of the bite in the finger. His indisposition soon became general and was attended with a feeling of extreme weakness; the patient refused to eat, and he died four days after, that is on December 16th, without having had any convulsions, about six weeks after the bite. Dr. Miquel, who was sent for, arrived just to find the patient dead, with froth at the mouth.

"It is impossible," observed M. Peter, "not to be struck here with at least two facts: The first is, that the premonitory pains set in, not in the bitten finger, but from the points of the inoculations. The second is, that the symptoms were not those of ordinary hydrophobia, for, setting aside some spasms of the œsophagus, the predominant accidents, instead of being of a convulsive character, were paralytic." Dr. Dujardin-Beaumetz did not find Professor Peter's observation conclusive, adding that nothing proved that the patient in question died of rabies; the patient had not been seen by a medical man and no autopsy was made. M. Chauveau, the well-known veterinarian, conceded to M. Peter that the patient may have died from rabies, though this has not been demonstrated. Even were the fact admitted, it would only prove that the preventive inoculations were inefficacious, and nothing more. In fine, it was going too far to assert that Pasteur's method was infallible. As to pretend that the rabies in the above case had been communicated by the inoculations, is quite another matter. The paralytic form of the malady proves absolutely nothing, and as much may be said of the premonitory phenomena which might have had their starting-point at the seat of the inoculations. These local phenomena are often wanting, and they have, in fact, a value of little importance. M. Verneuil finds that M. Peter abuses the *post hoc ergo propter hoc*. When one has been inoculated with an infectious malady and dies, it is not always, and fatally, from that malady, and he regrets that the observation of M. Peter is incomplete, and that it does not present the rigor of a scientific fact. He also wanted to know the reason why the veterinary surgeon had the dog killed that bit the patient, if it was only to ascertain that it was rabid, for he must certainly know that one can learn nothing very serious at the autopsy which would enable one to form a positive diagnosis of rabies, unless he inoculated another animal from the spinal marrow, which was just what he omitted to do.

At the same meeting M. Trélat, the President, read a letter that he had just received from Prince Zughil, of Russia, stating that ten Russian soldiers that had been bitten by a dog were sent to Paris to undergo the inoculations at M. Pasteur's laboratory, adding facetiously that they returned "cured," but that the dog which bit them was at the time, and is now, quite well. This excited some hilarity, but M. Trélat gravely remarked that this letter is interesting in the sense that it attests the innocuity at least of the inoculations, and that it should be saved as a document for the archives of the Academy. The discussion, which promises to be very exciting, was resumed on Tuesday last, but as several members are taking part in it, I shall report the result in my next.

In a report from M. Béclard, Dean of the Paris Faculty of Medicine, it is stated that the number of medical students regularly registered for study during the official year 1885–86 was 3,696, of which 533 were foreigners. Of this last number 108 were women, the greater part being Russians.

Professor Pajot, the well-known accoucheur, having completed his seventieth year, has retired, and his chair is to be temporarily occupied by Dr. Pinard, an agrégé of the Paris Faculty of Medicine.

DANGERS OF ADMINISTRATION OF ETHER IN NEPHRITIS.

To the Editor of The Medical Record.

A recent issue of your journal contains an article by Dr. Henry B. Millard—on "The Dangers of the Administration of Ether in Nephritis and in Bright's Disease." As the author has made some effort to present the literature on the subject, I beg to offer an important contribution.

During the winter of 1865–66, I lost a patient from uræmic poisoning a few hours after closing a laceration of the perineum, and in a subject otherwise in perfect health apparently.

This case drew my attention to the danger attending the administration of ether with any existing disease of the kidneys. It was reported to the Obstetrical Society; other cases have been given from time to time, and published in the different medical journals. Very little has been written on the subject, but I have had credit for the original investigation.

At the annual meeting of the State Medical Society, February, 1872, I read a paper on "Chronic Cystitis in the Female," which was reported in the medical journals of the city, and was afterward published at length in the *American Practitioner* for February, and in the "Transactions of the State Medical Society" for that year. I there state—"To the effects of the anæsthetic I attribute the chief danger attending the operation in the advanced stage of the disease, while from the irritability of the bladder its use is indispensable. As the kidneys are rarely able to perform their function sufficiently well to preserve life, the balance is easily lost in the attempt at examination, and death from uræmia rapidly takes place." During my service as "Surgeon in Chief" of the Woman's Hospital, it was a standing rule, which I endeavored to enforce, that in every instance the condition of the kidneys should be carefully investigated before the administration of an anæsthetic.

In the first and in the subsequent editions of my work on "The Principles and Practice of Gynæcology," this subject will be found treated of, and in the Index under the head—"Ether, danger of, in cystitis with renal disease."

Thomas Addis Emmet, M.D.

January 31, 1887.

HOSPITALS, THE SICK POOR, AND ALL ENGLAND.

To the Editor of The Medical Record.

Sir: The rapid growth of the population of Great Britain in recent years has caused a corresponding increase in the number and variety of those cases of sickness among the poor which can be adequately treated only in hospitals. Along with the increase of these cases there has been a similar growth in the hospital provision for meeting their necessities. But while the sick abound and the hospitals are numerous, there is often experienced very great difficulty in finding out the right hospital for the right patient at the right time. Hence arises much unnecessary suffering, with loss of time and money, and sometimes even the loss of life itself. These circumstances have, for a long time, forced themselves upon hospital managers; but there has appeared to be no general method applicable to all cases, which would remove and entirely put an end to the difficulties.

The Hospitals Association was formed some years ago, with the view of becoming a central meeting-ground for hospitals on the one hand, and for all on the other who might desire to come into relationship with them, either as patients or in any other capacity. To a considerable extent these objects have been gained, but now, by means of the Association, it is possible to obtain for a given patient in a given hospital with little or no loss of time, and also to obtain any kind of knowledge which may be desired concerning almost every hospital in the United Kingdom, or in the world. The resources of the Association have recently received such a degree of development that the objects which formerly were but partially and incompletely carried out, will, in a short time, be perfectly accomplished, and all these resources will then be placed at the disposal of every member of the Association, and every institution which may be now or hereafter affiliated with it.

It is desired to bring every parish or congregation, and even the remotest villages and hamlets, by affiliation, into immediate and permanent relationship with the hospital system of the United Kingdom, and with the Hospitals Association as the centre of the system. By this means every person needing the peculiar treatment which hospitals alone can give will be enabled to obtain, if eligible, without inconvenience or loss of time, the highest degree of medical and surgical skill which the science of the time affords. If the efforts of the Association be adequately seconded it is hoped to establish by its agency a fully equipped ambulance system for each large centre of population; and, by arrangements made with the various railway companies, to secure the cheap and easy removal to the nearest hospital of persons living in remote and outlying districts. In order to the complete carrying out of these objects the Association has prepared a scheme, which is hereby submitted to the parish clergy and the ministers of congregations, and also to all other persons who may be interested in the care and cure of the sick poor. The scheme is as follows:

I. Each parish, congregation, village, or hamlet, is invited, through its clergyman, minister, or other representative, to affiliate itself to the Hospitals Association by the formation of a "Hospital Society." In either case the annual[1] subscription will be one guinea, and that will secure all the advantages detailed above, together with the weekly publication, *The Hospital*. It is hoped that wherever it is practicable, a "Hospital Society" will be formed, consisting of the clergyman or minister as president, the local doctor or doctors, and two honorary secretaries, one of whom should be a lady. There can be little doubt that the poorer the parish or congregation, the greater would be the advantages derived from affiliation. With the view of bringing these proposals more fully under the attention of those actively interested in the welfare of the sick poor, a congress will be held in May next, under the presidency of Sir Andrew Clark, Bart., M.D., to explain, consider, and finally consolidate the work now begun.

II. The Hospitals Association will be an Immediate Aid Society and its Central Office will be in London. The Secretary will give prompt assistance in the placing of difficult and other cases in those hospitals which may be most suitable for them. Any clergyman or minister of an affiliated congregation having difficult cases for hospital treatment, instead of making applications in all directions, and often fruitlessly, will at once communicate with the Secretary at the Central Office, and his difficulty will be at an end.

III. The office will be a *Bureau of Information* and a *centre of reference*. It will give all possible facilities for gaining the completest knowledge of any and every hospital in the kingdom, and of hospital affairs generally. It will arrange for lectures and illustrations of hospital life for the winter months. It will provide trained and eminent lecturers. It will give aid and advice in the management of public meetings, and co-operate in obtaining men of standing and ability as speakers on specially important occasions.

IV. The new journal of the Association, *The Hospital*, which is published weekly, will be sent post-free every week to each subscribing member of the Association, affiliated parish, or congregation. *The Hospital* will con-

[1] In the case of individuals, a single payment of ten guineas constitutes a Life Member.

tain the latest, most accurate, and most interesting information concerning hospitals and kindred charities, as well as instructive articles on medical and sanitary questions and the related topics.

V. Facilities will be offered whereby members of the Association, and of affiliated societies, may from time to time visit and inspect the general and special hospitals and other institutions of a like kind, thereby obtaining at first hand whatever knowledge of the subject they may wish or require.

Such is the plan which The Hospitals Association commends to clergymen, ministers of religion generally, and to all other persons who are concerned in the well-being of the sick poor. It is conceived in the interests of the poor and of those who have the care of them. It is easy to see, however, that not only will it be of inestimable service to the sick, but also that the hospitals and their work will thus be brought into immediate practical relation with every parish in the kingdom, and will so become known, valued, and supported, as they urgently need and justly deserve.

There can be no question that if the scheme becomes popular, as it is hoped, much unnecessary suffering will be prevented, much waste of time avoided, and much hostile criticism of hospitals, their work and their methods, brought to an end.

Applications for membership, or for further information, should be made to the Secretary, Hospitals Association, Norfolk House, Norfolk Street, Strand, London, W. C. I am, etc., HENRY C. BURDETT.

Army News.

Official List of Changes in the Stations and Duties of Officers serving in the Medical Department, United States Army, from January 30 to February 5, 1887.

BRECHEMIN, LOUIS, Captain and Assistant Surgeon. Granted leave of absence for four months, with permission to go beyond sea, to take effect when his services can be spared by his department commander. S. O. 28, A. G. O., February 3, 1887.

POWELL, JUNIUS L., Captain and Assistant Surgeon. Granted leave of absence for two months, to take effect when his services can be spared by his department commander. S. O. 24, A. G. O., January 29, 1887.

BURROWS, C. C., First Lieutenant and Assistant Surgeon. Ordered for temporary duty as Post Surgeon at Fort Barrancas, Fla., to take effect upon the expiration of his present leave of absence. S. O. 24, Division of the Atlantic, February 3, 1887.

CLENDENIN, PAUL, First Lieutenant and Assistant Surgeon. Ordered for duty as Post Surgeon at Camp Pena Colorado, Tex. S. O. 14, Department of Texas, January 26, 1887.

Medical Items.

CONTAGIOUS DISEASES—WEEKLY STATEMENT.—Report of cases and deaths from contagious diseases reported to the Sanitary Bureau, Health Department, for the week ending February 5, 1887:

	Cases.	Deaths.
Typhus fever	1	0
Typhoid fever	7	5
Scarlet fever	34	4
Cerebro-spinal meningitis	3	2
Measles	500	78
Diphtheria	100	52
Small-pox	6	6
Yellow fever	0	0

THE TREATMENT OF CHANCROID BY SALICYLIC ACID.—The use of salicylic acid in the therapeutics of soft chancre has been recommended by various authors. Dr. Giuseppe di Bella, in a report of cases treated in the clinics of Drs. Monteforte and Santi-Sirena, says that this agent has acted promptly and efficaciously in a large number of cases. Hebra has seen a number of cases of chancroid cicatrize in a very few days under treatment by salicylic acid. Dr. Ping y Falco has also obtained most satisfactory results with this same agent in similar cases. Dr. A. Farriols Anglada has reported thirty-two cases of soft chancre in which salicylic acid was used with the happiest results (*Journal of Cutaneous and Genito-Urinary Diseases*, February, 1887). This method, he says, possesses many advantages over the others hitherto used, and especially over the abortive plan. It is very simple, and the patient himself can carry it out; it is only necessary to wash the chancroid with some antiseptic fluid, and then to dust it with finely pulverized salicylic acid. In the great majority of cases no more than two applications in the twenty-four hours are required, and in a few days (four or five, according to the author's experience) the ulcer loses entirely its specific characteristics. When this result has been obtained, that is, when the lesion has been converted into a simple ulcer, the applications of salicylic acid should be suspended, and a carbolic-acid lotion or boracic-acid ointment employed. Under this treatment the ulcer becomes covered with healthy granulations, and cicatrization proceeds with great rapidity. Finally, Dr. Anglada urges, if we bear in mind that salicylic acid causes hardly any pain or inconvenience of any sort, in this way differing so greatly from the caustics ordinarily employed, we are forced to admit that it is a most valuable therapeutic agent in the management of soft chancres.

PALATABLE TEREBENE.—The following formula is said to produce a good mixture, and is not unpalatable:

℞. Terebene..... 1 part.
Glycerine,
Spt. vini rect.,
Syr. simpl.....ää 15 parts.
M. Ft. mist. A dessert-spoonful for a dose.

THE COCAINE CRAZE.—In an article entitled "Sensationalism in Therapeutics," Dr. C. H. Hughes (*Weekly Medical Review*) says: "The truth about cocaine is that it is a tonic and stimulating exhilarant of some power in melancholia, mental depression, and nerve-weariness. That it acts rapidly but much more evanescently than morphia. That excessively used it intoxicates and converts melancholia into mania. That, given largely in the upright position, it is capable of inducing vertigo, whether, as Dujardin-Beaumetz thinks, by inducing anæmia is not proven. That as an antidote to alcoholism and its effects it is not equal to morphia. That it is not equal to morphia as a tonic in melancholia, or as a narcotic in certain states of nervous debility. That in equal doses it nauseates more certainly than morphia. That it is not an antidote to meconophaggism, though beneficial if judiciously used and timely abandoned. That it may be used with advantage, if carefully given, in the withdrawal of opium and the cure of the opium habit, as one of many substitutes, but cannot be alone relied upon. That it intoxicates some persons and poisons them. That its continuous use is difficult to break off. That it is probably capable of developing permanent madness, like similar intoxicants, as a few doses occasion temporary insanity. That it is a dangerous therapeutic toy, not to be used as a sensational plaything. That it will probably help to fill rather than deplete the asylums, inebriate and insane, if it should unfortunately come into as general use as the other intoxicants of its class. As an intoxicant it is more dangerous, if continuously given, than alcohol or opium, and more difficult to abandon."

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Original Articles.

INJURY OF THE EAR CAUSED BY THE BLAST OF A BURSTING SHELL:

WITH SOME REMARKS ON THE EFFECTS OF EXPLOSIVES ON THE ORGAN OF HEARING IN WARFARE.

BY SAMUEL SEXTON, M.D.,

NEW YORK.

THAT the ear may be injured by the violence of aërial impact, or concussive force, propagated by the explosion of gunpowder, has been known ever since the introduction of explosives in military warfare. Owing, however, to the obscurity of traumatic lesions of the drum of the ear, or of its deeper parts, and the limited means of observation at the command of the military surgeon in the field, it has been more difficult to study these injuries than most other wounds. Such was my own experience at least, and reference to the literature of the subject shows that the opportunities of writers on military surgery were probably no greater in this respect. It is a fact, moreover, that from the suffering occasioned by other and more painful wounds simultaneously received, together with the bewilderment caused by nervous shock, aural injuries are liable to be entirely overlooked. Indeed, in some of the cases about to be described there were serious wounds of the ear of which the wounded men themselves had been unconscious up to the time of my examination, several weeks after the accident. It may be stated here, on the contrary, that after artillery engagements it is not unusual for participants to fancy that deafness, due to other causes wholly, has been produced by the loud sounds of great guns, and since the War of the Rebellion applicants for pensions not infrequently present their cases with the statement that aural disability has originated in this manner.

While the writer was recently seeking information from perons having had experience in the field or on shipboard, especially among army and navy officers, an opportunity quite unexpectedly presented itself to investigate thoroughly the effects of concussive force on the ears of a number of men in the midst of whom a twelve-inch mortar shell, weighing five hundred and eighty-five pounds, and containing a bursting charge of twenty-seven pounds of rifle-powder, was accidentally exploded. This took place at the United States Ordnance Proving Ground, Sandy Hook, October 21, 1886, at 3.30 P.M.[1]

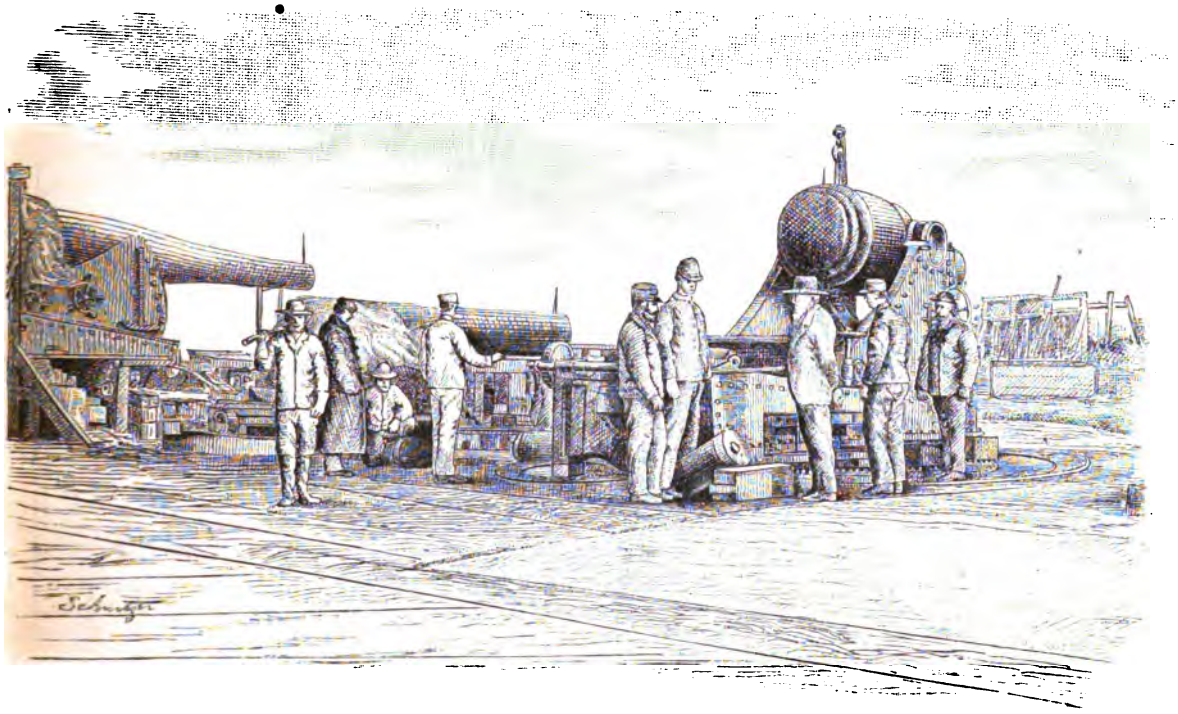

FIG. 1.

The effects produced by the bursting of this shell, both as regards the aërial concussion of the blast and the distribution of fragments of metal, were, of course, similar to those produced by the explosion of projectiles fired from great guns during an engagement; and, it is hoped, since a careful study of wounds of the ear arising from this cause have never been reported, so far as known, that a detailed account of the conditions of the organ of hearing, found to exist in the persons injured, may be of interest to both medical and military men.

The scene of the catastrophe, as shown above, was produced from a photographic view taken on the spot by my friend Mr. Walter C. Tuckerman. The men were taken in about the same position they occupied at the time of the accident; the places of three of them, namely, Lieutenant Medcalfe and private King, killed, and Cor-

[1] The ordnance officers on duty at the time of my visit, namely, Colonel Mordecai, Captain Shaler, and Captain Whipple, kindly offered every facility in aid of my investigation, as did also Colonel Janeway, of the Medical Department, U.S.A., Post Surgeon, Governor's Island.

poral Goodno, absent in hospital, were occupied by other persons.

The diagram of the twelve-inch mortar, gun-carriage, and platform (Fig. 2), where the firing was taking place, was kindly designed by Captain Whipple; the facings of the men are designated by arrows, and it also shows the direction and force of the wind at the time. The shell with a drift and hammer, and thus exploded it) was instantly killed, and his body was blown fifty-five feet away; Lieutenant Medcalfe, who was standing by the side of the shell, was blown twenty-two feet and died in thirty minutes; private Clark was blown fifteen feet. The other six men kept their feet during the explosion. Eight men thus escaped with their lives, but all of them

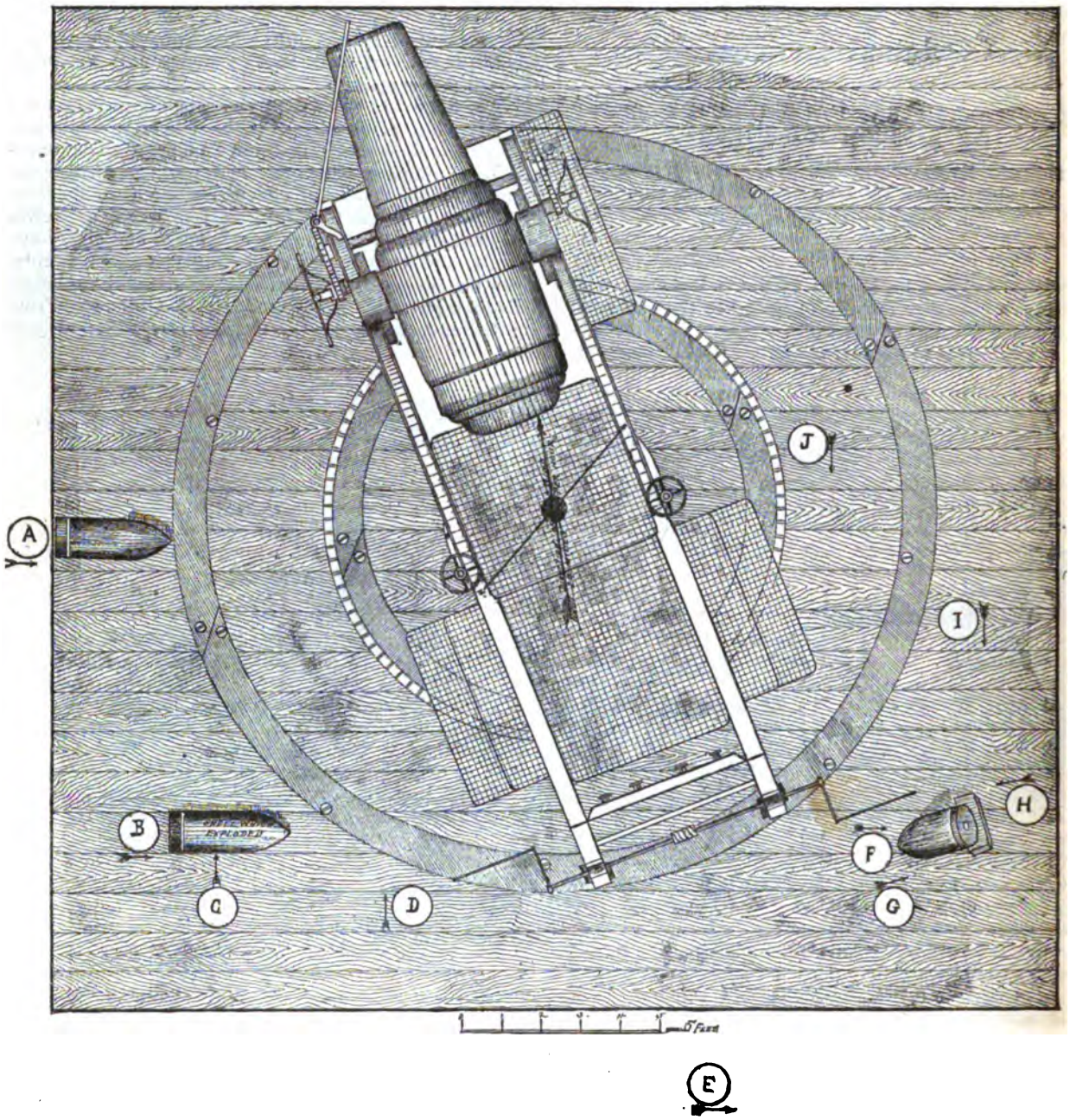

FIG. 2.

distance of the men from the shell which exploded was as given below:

A. Sergeant Abbott,	position	8	feet	from	the	shell.
B. Private King,	"	at the base of the shell.				
C. Lieutenant Medcalfe,	"	at the side of the shell.				
D. Corporal Clark,	"	4	feet	from	the	shell.
E. " Goodno,	"	12	"	"	"	"
F. Private Cunningham,	"	15	"	"	"	"
G. " Cramer,	"	15	"	"	"	"
H. Mr. Sinclair,	"	19	"	"	"	"
I. Private Burns,	"	19	"	"	"	"
J. Corporal Ingram,	"	16	"	"	"	"

As an immediate effect of the explosion, Sergeant Abbott was blown ten feet from his position. Private King (who was closing the screw plug in the base of the

were more or less injured by the concussion, and some of them received contused wounds or were burned by the blast.

The three men first described below were examined at the Post Hospital, Governor's Island, October 31st, where they had been sent for treatment. They were still suffering from shock and contusions, but able to walk without assistance to the office where the examinations were made.

CASE I.—Sergeant John Abbott, aged thirty-four, was kneeling on right knee and toe when explosion occurred, presenting right ear toward the shell. He was thrown ten feet by the force of the concussion, found himself upon all fours, but got up immediately and ran some thirty feet before looking to see what had hap

pened. Noticed that the right side of chest, shoulder, and face were burned by the blast. As regards his hearing, although there was much talking and shouting, he could hear nothing at first. He was much confused, but had no vertigo or pain in the ears. An hour after the accident, however, the deafness was found to be confined to the right ear. After going to bed blood was observed on the pillow, and continued to trickle from the right ear for two or three hours, when it ceased. He slept but little. Pain has been experienced in injured ear on blowing the nose, or swallowing only.

Hearing: Right ear, ordinary voice only; left ear, low voice if plainly spoken—distance, eleven feet.

Examination of ears.—Auricles and canals were healthy; the latter are small.

Right drum-head: A large, irregularly ovoidal perforation of the drum-head exists in the posterior segment; it is bounded anteriorly by the malleus handle, inferiorly by the annulus tendinosus, and above by the membrana flaccida. There is a narrow margin of the membrane between the perforation and posterior wall of the external auditory canal. (This opening was temporarily occupied by a dark crust, probably of inspissated

FIG. 3.—Abbott: Right Drum-head.

muco-sanguinolent matter.) The anterior segment is dull and fleshy-looking (cicatricial?); the membrana flaccida is considerably injected. The short process is just visible, pressing out as a lighter point in the drum-head.

Left drum-head: Slightly atrophic, moist-looking, and opaque. Short process rather prominent, but other landmarks somewhat faint.

Patient has some autophonous phenomena, the voice seems lisping, and for three or four days past there has been tinnitus aurium resembling the sounds heard in a shell when placed to the ear. Vision unaffected.

November 27th.—(Seen at Sandy Hook.) Right ear: The upper portion of the anterior segment is now opaque, slightly vascular, and has a cicatricial appearance; the lower portion is partly cicatricial, exposing some fibrous structure extending perpendicularly. A large, dark, partially inspissated blood-clot yet remains on the lower portion of posterior segment, extending upward in front of the malleus handle; reproduction of the membrane is probably taking place beneath this clot. The clot not shown in diagram. Patient hears low voice at fifteen feet plainly in both ears, but when several persons are conversing he cannot follow them. His voice still sounds to him as if he were lisping. Has occasional tinnitus.

CASE II.—George Clark, aged twenty-seven; entered Governor's Island Hospital October 23d. Was standing, when the explosion took place, four feet from the point of the shell, looking at King, and having the left ear toward the missile. He was thrown fifteen feet, but jumped up at once. Was much confused with a "dumb feeling" in the ears; first running away from the scene, and then returning. He staggered to the pump, some three feet distant, and felt better after he had taken some water. He has been, however, unsteady in his gait ever since, and is very nervous and giddy. He was employed in running errands nearly all night. Afterward was too nervous to sleep. He could not sleep on the second night, but on the third night was given bromide of potassium, which has been continued ever since.

Status præsens.—Patient complains of pain through temples, with throbbing sensation. His pulse is weak and irregular. There is a noise in the left ear resembling that of a "steamboat."

Hearing: Right ear, low voice; left ear, only loud voice at eleven feet distance.

Examination of ears.—Right ear: The posterior segment of the drum-head rather opaque and there is at about the centre a slightly injected spot. The anterior segment is fairly brilliant, with good cone of light. A dark line extends along the posterior edge of malleus handle, having the appearance of a light brown crust. This might be taken for a shadow, but for the wrinkled appearance of the membrane about its centre, the folds running principally up and down. Syringing the right ear, which has been tried once, gives rise to unbearable pains in the right eye.

Left ear: There is a large loss of substance of the drum-head, embracing most of the posterior segment be-

FIG. 4.—Clark: Left Drum-head.

low the membrana flaccida, extending inferiorly to the tympanic ring, then curving into the lower portion of anterior segment, and through which the inner wall of the tympanum can be seen. The landmarks afforded by the malleus handle are not visible, but the whole membrana flaccida and the upper portion of the anterior segment of the membrana vibrans has a thickened, macerated, and retracted look. There is a pulsating bubble, affording a light reflex in the anterior-inferior portion of the tympanum, and another posteriorly.

A small amount of blood trickled from left ear the night of the injury; there is now discharge of muco-purulent matter. Pain has been experienced in the left temporo-maxillary space. The ear has been syringed several times daily with a pump-syringe, and the mastoid process was blistered three days ago. For twenty-four hours after the injury mastication was painful. Eructations also gave rise to pain. His own voice is autophonous, and sounds "far off" to him. Patient has become highly neuropathic, and says he has "gone all to pieces." He can scarcely stand to-day, and seems to be getting weaker. Complains also of left eye; says it is "blurred." Both pupils are large, but respond to light. There is twitching at the inner canthus of the left eye, and above the angle of the jaw.

November 21st.—(Patient seen at my office.) He has been on duty at Sandy Hook for past ten days. His left arm and leg feel numb unless he is exercising, and especially at night. He is feeling somewhat stronger. Complains of no vertigo, but of much dull pain in temporal regions, which is increased by the firing of great guns. Cold air causes pains in the ears, especially in the left, and patient thinks that the left auricle is colder than the right. The right ear is, however, healthy. The left ear has healed and the inflammation and discharge have ceased. The perforation remaining is as large as when first seen, and shows no tendency toward closing. The malleus handle is scarcely distinguishable. There is pain, at times, in the ear but no tinnitus. He has still, however, tinnitus, resembling escaping steam, in the right ear. Introduction of a speculum into the left ear causes tears to flow from left eye, which also feels irritated. When patient uses his eyes in reading, etc., the left gets "blurred," he says, and "weak."

Hearing: Left ear, loud voice only; right ear, low voice, at eleven feet distance.

Patient becomes confused when several persons are conversing.

November 27th.—(Seen at Sandy Hook.) Patient is now improving and feels stronger. He is less nervous also. In left ear the parts are clearing up, but the perforation is unchanged.[1]

[1] Captain Whipple writes, December 22, 1886; "I am sorry to say that I hear Corporal Clark, whom I had transferred back to Springfield, is not doing well. His 'hearing' is getting worse, and he seems to have lost his grip." Subsequently, however, Clark again became much better.

CASE III.—Corporal Walter Goodno, aged thirty-four, had just picked up a handspike and walked away from the shell. Thought a keg of powder on his right had exploded and tried to get away. His ankle was hit, hat torn to pieces, and he received a contused wound of the scalp, just below the occipital protuberance. Patient had his left ear turned nearly toward the shell at the time of its explosion. He had autophonia at once, could hardly hear his own voice; but could distinguish pretty well what others were saying, in the right ear. Immediately after the injury there was a great ringing in the left ear. Patient says he felt something (which he fancies was blood) drop down "into the throat from the head" about an hour afterward.

Examination of ears.—Left ear: At the inner end of the canal the cutis is dry, white, and exfoliating, being

FIG. 5.—Goodno: Left Drum-head.

covered with a light coating of boracic acid and iodoform in powder. Almost the entire portion of the drum-head, constituting the membrana vibrans, appears more or less disorganized; the posterior portion is missing, leaving a ragged edge, and the anterior portion has a bruised, fleshy look. The malleus handle is very prominent.

Right ear: Membrana tympani lustreless, uneven, and depressed. Slight injection along malleus handle. A

FIG. 6.—Goodno: Right Drum-head.

large circular area, occupying almost the entire upper portion of the posterior segment, is of recent cicatricial formation, with uneven, depressed, and lustreless surface. Behind this can be seen the inferior portion of the long process of the incus. On the umbo is a small, dark blood-clot. Two parallel folds of the membrane, resembling cords, run from the umbo forward and downward to the margin of the drum-head. The area between these is occupied by disorganized substance. Both external auditory canals are large.

Hearing: Right ear, low voice, if plain; left ear, ordinary voice, if plain, at twelve feet distance. Patient still has autophonia. The pulse is feeble and rather frequent.

December 6th.—(Seen at my office.) Patient has recovered and will report for duty. *The right ear* shows a minute, dark, and depressed cicatrix at umbo. Below this, occupying nearly the entire area of the lower segment of the drum-head, is a large, circular perforation, where there was broken-down tissue before. No inflammatory symptoms remain, and the drum is cured. In the left ear nearly all of the drum-head is absent, and the denuded malleus handle hangs down in front of the inner wall of the tympanum *in situ*.[1] The anterior edge of the round window and the incudo-stapedial joint is exposed to view. All the parts have a whitish, dry appearance. All discharge from the ears has ceased. Syringing or probing the left ear causes a sensitive impression in the left eye and lower part of larynx.

Hearing: Left ear, ordinary voice; right ear, lowest voice, at fifteen feet distance. Watch heard in left ear only on contact; in right, at thirty-three inches. The extent of sloughing in the membranes in this case is remarkable. The great amount of hearing for the voice is also notable, and quite in contrast to the poor hearing-power for the watch.[2]

[1] The diagrams of the drum-heads in this case, as in the others, represent the appearance of the parts when last seen.

[2] Corporal Goodno suffered a relapse in respect to the wound at occiput, which had healed but slowly, and on return to the hospital a small fragment of shell was removed from the wound. After this recovery was rapid.

The following persons were examined at Sandy Hook, November 27, 1886, over five weeks after the accident:

CASE IV.—Mr. Allan G. Sinclair, machinist, aged sixty-two years; has been in the employment of the United States Government for some thirty-seven years, twenty-four of which have been passed in the Ordnance Department. He has been testing guns for twenty years, but has never experienced unpleasant sensations or injury of the ears from this occupation. At the time of the explosion the patient was standing about nineteen feet from the point of the shell, and facing it. At first he was dazed for some moments, but does not think he was thrown down. His hat was blown off. He had no pain in the ears, but a noise in both resembling escaping steam. This still continues, but is less severe. Of late he has felt pulsations in the ears, mostly in the left. These are variable, scarcely ever occurring before about 3 o'clock, A.M., when he fancies they wake him up. His ears have felt "dumb" from the first, at times, and his own voice is autophonous, and seems distant to him. No vertigo.

Hearing: Left ear, ordinary voice only, at ten feet; not so well in the right.

Examination of ears.—Right ear: The malleus handle

FIG. 7.—Sinclair: Right Drum-head.

has a light-brown appearance, and behind it lie some inspissated blood-crusts. A cicatricial area extends from the anterior superior border of the tympanic ring downward, and terminates in a transverse band of thicker tissue below. Underneath this band there is a large loss of substance in the membrane, and under this, below the umbo, extending into the lower portion of the posterior segment, is another area of cicatricial tissue, due to reproductive growth. The denuded short process marks the termination, posteriorly, of the band above mentioned.

A small crust, consisting of epithelium and inspissated blood, which has worked off from the wound of the drum-head, lies on the posterior wall of canal. The parts have healed up entirely, and are free of any injection. Through the large perforation the inner wall of the tympanum is visible.

Left ear: A blood-clot occupies most of the posterior segment of the drum-head, which is elsewhere fairly brilliant. At the junction of the inner end of canal and posterior edge of the membrane, and behind the clot, there is a small ulcerous surface covered with a rather loosely attached scab, the seat of a perforation probably. Both of the external auditory canals and drum-heads are large, and this may account for the great amount of injury. The ears have received no treatment. The very considerable deafness in this case is permanent, rendering general conversation impossible.

December 13th.—(Seen at my office.) Right ear: The crust of epithelium and inspissated blood, which was described as working off the drum-head on to the posterior wall of canal, can be picked off. The small blood-clot behind the short process has become detached, leaving a reproduced dermic layer beneath. The perforation has become smaller, and its circumference looks as if it would contract still further.

Left ear: Membrana tympani cleared up entirely. The crust on the drum-head near the wall of canal has worked off on the canal and can be easily removed. The blood-clot which occupied almost the entire posterior segment of the drum-head is loose, and can be easily removed with the forceps. Beneath this crust, doubtless the seat of a perforation, the membrane has healed up entirely.

Hearing: Left ear, low voice; right ear, loud voice, at fifteen feet distance. Watch pressed against the ears not heard at all. Patient hears the noises in the streets of wagons, etc., like a low, rumbling, unaccustomed

sound. He has no nausea, vertigo, etc., and feels very healthy and strong.

CASE V.—Private Michael D. Burns, twenty-four years of age, was standing about eighteen feet away, and was dumfounded by the explosion, felt stunned and dizzy, and had "buzzing" noise in both ears.

Examination of ears.—Both canals are of medium size.

Right ear: There is a marked vascular condition about the superior portion of the drum-head, and extending down along the malleus handle. The drum-head has a general humid appearance, and there is a beginning opacity just in front of the umbo. There is a small cicatrix, with some fibrous lines, in lower portion of posterior segment. Since this ear was more exposed than the left, the abnormalities seen point to extensive injury followed by almost complete restoration.

Left ear: The drum-head has a somewhat humid appearance, due to catarrhal inflammation of the middle

FIG. 8.—Burns's Left Drum-head.

ear. There was a little pre-existing hardness of hearing. There is a recent perforation in the posterior segment near the edge of drum-head. This is partly concealed by a crust, and gives, on inflation, a whistling sound.

Hearing: Right ear, ordinary voice; left ear, lowest voice, at fifteen feet distance. Watch heard at $\frac{5}{33}$ inches in the right ear, and at $\frac{14}{33}$ inches in the left. This man had both auricles frozen two years ago, while out on the plains.

CASE VI.—Private Joseph Cunningham, twenty-three years of age, very tall (over six feet) and slender. After the accident patient did not take cognizance of anything for a few minutes, and was dizzy for two days afterward. Has been troubled in both ears since the explosion, especially in the right, which was constantly painful for over a week, and is occasionally so now. He experienced tinnitus aurium, which has not entirely ceased yet. His voice was autophonous and sounded hoarse and unnatural to him in both ears for four days.

Examination of ears.—Right ear: The drum-head is imperfectly developed; it is transparent (as in cases of cicatricial reproduction) and lacks brilliancy. The short process protrudes unduly. *There is a crust on the margin of the posterior segment,* and a slight opacity below the umbo.

Left ear: The same general appearances of the drum-head are present as in the right ear. The outlines of the malleus, however, are much more prominent. The long process of the incus and its attachment to the stapes is very plainly seen through the drum-head. Just posteriorly to the short process a small area of the membrane is much thinner than elsewhere and seems sunken. Notwithstanding these abnormalities the patient gives no history of previous ear trouble, and there is a strong probability that the appearance is due to reproduction succeeding to almost complete destruction of both drum-heads from the explosion. He has a very high palatal arch, and the incisors above and below are "pegged."

Hearing: Right ear, low voice, with difficulty; left ear, lowest voice, at fifteen feet distance.

CASE VII.—Private Thomas Cramer, aged thirty-nine, was standing with back toward shell, but the right ear was a little more exposed than the left; felt a stinging sensation from the concussion "all the way up the left side from the foot to the ear." Has felt nothing since. The ears were apparently uninjured. It is difficult to account for the escape of the ears from injury in this case.

Hearing: At fifteen feet distance, lowest voice in both ears, but best in right.

CASE VIII.—Corporal Ingram, thirty-two years of age, felt stunned for a minute or so, but had no pain or vertigo; in fact, had no aural symptoms whatever. Patient had accumulation of wax syringed from both ears in 1883. Dr. C. J. Colles examined this man for me, and found that both ears contained considerable soft cerumen. As no symptoms of injury to the hearing organs had appeared, it was thought probable that the presence of this accumulation of cerumen had been the means of

FIG. 9.—Ingram's Left Drum-head.

protecting the drum-heads from the injurious effects of the explosion. This, however, does not appear to have been the case. The patient was seen at my office on December 13th, when the wax was removed. It was found that the quantity of this was not sufficient to occlude the canals. The right and most exposed drum-head looked well; it was probably protected from the concussion by the heavy wooden structure upon which the mortar was mounted. Behind the wax, however, in the left ear, which was turned from the shell, was a quantity of inspissated purulent matter and epithelium. When this was removed the drum-head was found to be red and angry-looking, and the landmarks were not seen. Syringing produced a feeling of faintness and nausea.

Hearing: Left ear, ordinary voice only; right ear, low voice at fifteen feet distance.

December 4th.—(Seen at my office.) There has been no discharge from the left ear, and parts have cleared up slightly, showing great arrest of development, the short process and posterior fold being very prominent; otherwise the landmarks are hardly distinguishable. The entire membrana vibrans is, apparently, in a necrotic state, indistinguishable from the inner wall of the tympanum. A very thick desquamative collection lies at the site of the anterior inferior segment.

December 21st.—(Seen at my office.) There has been no discharge or pain, and the parts are dry. It can be seen that the entire membrana vibrans has been destroyed, excepting a thin edge remaining attached to the posterior wall of the tympanum. Ingram thinks hearing in the left ear has improved. He has no tinnitus, vertigo, or nausea.

Hearing: Left ear, low voice at fifteen feet distance; as tested by König's rods, fifty thousand vibrations per second perceived in both ears.

The diagrams of the drum-heads injured were drawn by Dr. C. J. Colles. The dark shading marks the extent of loss of substance in each case; the lighter indicates the presence of cicatricial tissue. In the case of Cunningham no diagram is given, since the parts were probably almost entirely reproduced.

REMARKS.—As might have been expected, the immediate effect of the severe concussion caused by the blast of the explosion just described was dumfounding in the extreme, so far as most of the persons in the immediate vicinity were concerned. The mental confusion which ensued in some of the cases lasted a long time, and in one instance, that of Corporal Clark, it is doubtful if complete recovery ever takes place.

In some of the cases the absence of prominent symptoms of injury of the ear, such as pain in the organ, tinnitus, deafness, or discharge, was noticeable. Soldiers are, however, as a rule, accustomed to endure hardship without complaint, and, in fact, all insensitive persons are liable to overlook ear disease until incapacitated to perform their work. It was only after persistent inquiries were made that some of these persons would admit that they had suffered any injury of the ear.

I have endeavored to obtain some reliable statistics in regard to the frequency of injuries to the organ of hear-

ing during the late War of the Rebellion, but without satisfactory results; thus the number reported by the census-takers in 1880, as furnished me by Mr. Fred. A. Wines, of the Census Bureau, was only fifteen from all causes. These are given below. The meagreness of facts obtained in this manner illustrates the inefficiency of such a method for collecting valuable information. A single shell explosion has, in many instances, doubtlessly, injured as great a number.

ASSIGNED CAUSES OF DEAFNESS—WAR.

Connecticut, "discharge of cannon"	1
Georgia, "firing cannon in war"	1
Indiana, "cannon fired"	1
Illinois, "gunshot wound"	1
Massachusetts, "discharge of cannon"	1
Minnesota, "from a shot"	1
Missouri, "jar from cannon"	1
Nebraska, "heavy cannonade in France"	1
New York, "report of gun"	1
Ohio, "discharge of cannon"	1
Ohio, "severing of tongue cords by shot"	1
Pennsylvania, "shot of gun"	1
Texas, "gunshot wound"	1
Texas, "gun fired close to ear"	1
Wisconsin, "firing cannon"	1
Total	15

The Pension Office, doubtless, might furnish more reliable statistics were the disabilities for which pensions were granted tabulated; but Congress has, as I am informed by Medical Examiner Wood, omitted to make any appropriation for such work. It is to be regretted that more attention has not been given to this matter, since there must be a large number of persons who have suffered injury to the ears from the concussion of explosives, who are as much entitled to be pensioned by the Government from this cause, as from others which happen to be more easily diagnosed.

I have obtained some facts in conversing with officers who served during the War of the Rebellion, which may be of interest here. Commander Robeson, at the naval attack on Fort Fisher, found that the continued explosion of fifteen-inch shell at close quarters gave rise to very disagreeable ringing in the ears, which finally benumbed the hearing sense so much that he could not hear an order given on deck for several days; the disability, however, was but temporary. My friend Dr. Delavan Bloodgood, Medical Director, U.S.N., informed me of a case where deafness was said to be "from concussion of the cannon" in an action on Lake Champlain, July 3, 1813. The case was that of Captain Sawyer, U.S.N., who was a midshipman on board the sloop Eagle, which was sunk by the British flotilla, aided by troops on the shore. The engagement lasted four hours; and the captain was afterward taken to Halifax and confined on board a prison-ship over seven months. It is probable that exposure subsequent to the action very much increased what might have been but a temporary difficulty. On the cessation of the retaliatory hostage system he was immediately ordered to the Constitution, and afterward served in the Brazilian, Pacific, West Indian, and Mediterranean squadrons, and was finally surveyed and condemned, on account of deafness, in 1822.

I am in receipt of a communication from Medical Director Henry O. Mayo (retired), U.S.N., giving his own experience as to the effect on the ear of the concussion of great guns, which is of much interest, since it shows the effect of repeated injuries. He says: "I first felt the effects of concussion from big guns in the summer of 1861, on board the frigate Savannah, while engaged in a scrimmage with some rebel gunboats at the mouth of the James River. As the affair promised to be of a bloodless character, from the respectful distance kept by the enemy, I seated myself in the bridle-port, on the gun-deck, to watch the performance. My hearing was quite impaired for a day or two, but in a short time the effects of concussion passed off entirely.

"Just at the close of 1864 I was attached to the U.S.S Powhattan, of Admiral Porter's fleet, and was engaged five days (three at one time and two at another) in the bombardment of Fort Fisher, and the other batteries at the entrance to Wilmington. Having occasion to go on deck at times during the action, I could only do so by the cabin companion-way, which was but a few feet from the eleven-inch pivot gun. This chanced to be discharged two or three times, just as my head was about on a level with it, going up or down the hatch, and the concussion was tremendous. Once I thought the gun had burst, and taken my head along with it! Upon reaching home, a month or two afterward, I found the hearing of the left ear much impaired, but the right still served me so well that I was enabled to continue my ordinary duties on the active list.

"In the early part of 1870 I went to China as surgeon of the Asiatic fleet. During this cruise I was exposed for one entire day to the concussion of big guns engaged at target-firing on board the flagship Colorado. This gave the *coup de grace* to the hearing of the left ear, and still further impaired that of the right. In 1875 I was retired on account of deafness."

Dr. Mayo is of the belief that the cause of the defectiveness lies in the transmitting mechanism of the middle ear, and not in the inner ear or auditory nerve-tract. *The Eustachian tube of the left* (worst) *ear has alwdys seemed abnormally pervious, while the right was considerably obstructed.* He cannot hear the loudest-ticking watch pressed against the left ear, and only faintly in the right. He can converse pretty well with *one* person at close range, who speaks slowly and distinctly.

It would seem, in cases where chronic catarrh of the middle ear already existed, difficult to determine the exact amount of injury due to this cause and to concussion, respectively. I think that where rigidity or fixation of the transmitting mechanism existed from catarrh the ear would thus be made more sensitive to concussion. *Per contra*, it is found that boiler-makers, who appear to have their catarrhal deafness increased by the terrific concussion from riveting boilers, do not usually complain of hyperæsthesia or of painful sensations therefrom. But this is, perhaps, a question of sensitiveness to such impressions.

Among other instances coming to my knowledge the following are of interest: General Leonidas Polk, a few days after the battle of Belmont, was standing at the breech of an eight-inch rifled gun, which, on being fired, exploded and set off a magazine of fixed ammunition immediately underneath the piece. The captain of the battery and four or five others, who were standing near, were killed. General Polk was very miserable for a few moments from the shock, and was confined to his bed for some ten days. The left ear began to discharge the day of the injury, and continued to run until he was killed, two and a half years later. He had no previous aural trouble, and the deafness following the injury was the cause of much worry.

General Imboden, in an article in *The Century Magazine* for May, 1885, states that at the battle of Manassas he squatted under the muzzle of a smooth-bore six-pounder brass cannon, when it was fired off; the concussion, he says, threw him twenty feet away, causing momentary unconsciousness. There was a gush of blood from the left ear, which has been deaf ever since.

Another case is as follows: David McConnell, late a private soldier in the one hundred and thirty-second N.Y.V., came to the New York Ear Dispensary, November 14, 1879, at which time he was an inmate of the Soldiers' Home, 205 West Thirty-ninth Street. He stated that in 1864 he was engaged fixing shells (torpedoes?) to be used in blowing up some works, when one of them was accidentally exploded. Fragments of the shell wounded him about the left side of the head, one piece striking the ear. He was blown a considerable distance by the blast. He was sent to a

hospital, where the ear ran a good deal, and there have been acute and painful exacerbations now and then ever since.

On examination at the infirmary I found a perforation in the drum-head, and chronic purulent inflammation of the middle ear. The hearing was considerably diminished. He afterward applied for a pension.

The following case came to the New York Ear Infirmary, July 17, 1877, also an applicant for pension. This patient, Bernard Cunningham, stated that he never had any aural affection until after the battle of Gettysburg. He was a private in Company G, Eightieth N.Y.V., and states that on July 1 (1863), a shell exploded near his left ear, from the stunning effects of which he did not recover for a quarter of an hour. On the third day a thin muco-purulent discharge was noticed coming from the left ear; it soon assumed a purulent and offensive character. Patient states that an aural injury was diagnosed by Regimental Surgeon Laughan soon after the injury was received.

When the patient came to me, fourteen years had elapsed since the accident, during which time he had never been free of distressing tinnitus, which was compared to the constant escape of steam under high pressure, with interruptions synchronous with the heart's pulsation. Autophonous phenomena were experienced, and he felt that unless some relief was obtained he should become insane. The deafness was variable—at times very great; usually he could hear a loud voice only in the left ear.

Examination showed the external auditory canal to be greater in calibre than the average, and the drum-head, which was correspondingly large, had a circular perforation in the posterior-inferior quadrant about three millimetres in diameter. In the certificate of disability given this soldier, it was stated that the opening in the drum-head would probably never close, and since there would be a tendency to frequent exacerbations, on account of the exposure to which an out-door laborer is subject, the discharge and autophony, though temporarily alleviated by treatment, would probably never cease altogether.[1]

Injuries like the above are especially important in consequence of affording a basis for claims on the Government for pensions.

In general it may be said that the concussion of great guns is much less in the rear of the piece than just over or at one side, and that the more in advance the greater the exposure to the blast. On shipboard a gun's crew is usually stationed from four to eight feet to the rear of the muzzle, and when protected by bulwarks and decks experience no special inconvenience; but if the ear happens to be on the same plane as the face of the muzzle, the effect at a distance of a few feet is disagreeable or even painful, and causes temporary deafness similar to long-continued concussion previously referred to.

The force of impact upon the drum-head will depend somewhat on the size and curvature of the external auditory canal and the rigidity of its cartilaginous walls; of course the more straight and large the passage, the greater the injury.

The size and tensile strength of the drum-head must be taken into account; if large and brittle, from trophic changes, it is much more easily ruptured.

The facing of the person exposed must also be considered — usually the ear directed toward the object from which the concussive force is propagated suffers most—but in the case of Ingram it was otherwise, the sound-waves having been reflected.

The immediate effect of the blast-impact in the cases injured by the shell explosion at Sandy Hook was undoubtedly upon the exterior surface of the drum-head mainly. While it is true that atmospheric tension is almost equal on both sides of the drum-head, yet a current of air passes much faster along the comparatively large tube comprising the external auditory canal than along up the small Eustachian tube, and hence in most of these cases the drum-head was driven in and contused against the inner wall of the tympanum and retained air with great force. The effect of such violent concussion is to cause the death of the membrane.

The momentum of sound-waves may ordinarily be estimated by the application of the law of central forces—the force being inversely to the square of the distance; the effects, practically, of such intense concussive force, however, cannot be measured by rules governing sound ordinarily, since it has been found by experience that instead of finding himself surrounded near the breech of the gun by highly rarified air, the experimenter may be subjected to quite an opposite condition, namely, one of condensation. In the former, intra-tympanic air would rush outwardly, carrying the drum-head before it. In confirmation of this allegation the puzzling experience related to me by Captain Shaler may be cited: The window-glass of the officers' quarters at the testing-grounds at Sandy Hook, situated some three to five hundred feet to the westward of the gun-park shown in the picture, are liable to be shattered by the concussion of large pieces in practice, and it has been found that *the glass is forced outward at one time and inward at another.* Regarding the drum-heads as window-glass under like conditions, we might find them ruptured by compression from without in one instance, and by distention of intratympanic air in another.

All of us are aware of the difficulty of ascertaining the source of sound in a sea-fog, where vapor-tension varies in a much greater degree than inland. Professor Henry described the reflections of sound which here take place as "acoustic shadows," a picturesque comparison recognizable by everyone familiar with those similar phenomena, namely, the reverberatory detonations of thunder during a storm, where clouds or mountain peaks intervene. It is to the unrecognizable vapor-"peaks" that many unexplained and puzzling acoustic manifestations are due. In the case of Corporal Ingram, cited, the wave from the blast did not nearly so much affect the right ear, which was turned toward the shell, as the left one, the sound having been apparently deflected from its course by the heavy gun-carriage intervening. General Franklin, in describing the battle of Gaines' Mill, in *The Century Magazine*, July, 1885, says it was not heard a mile and a half away; he thinks the dense woods intervening prevented the passage of sound. *Per contra*, the writer recollects hearing the cannonading at the battle of Manassas distinctly, though he was with troops more than one hundred miles distant.

Experiments are wanting to determine the windage[1] of balls. This must depend on their size and velocity, nearness of passage, and the force and direction of the wind. There seems to be no doubt but that the windage of a cannon-ball might rupture the drum-head of the ear. The compression of the air before and around the ball, I am informed by my friend Professor A. M. Mayer, is considerable, and the *velocity* of the compression is equal to that of the ball, which velocity may even exceed that of wind itself. So, an *aërial blow* of such a mass of air, at such high velocity, is probably quite sufficient to rupture the drum-head.

The size and force of modern military explosives having been greatly increased of late years, much more injury to the ear is likely to occur in future than has been recorded of the past, though the number of accidents from premature discharge or from exposure to the blast in firing breech-loading pieces must be less than when muzzle-loaders were in vogue.

[1] The Commissioner of Pensions, the Hon. John C. Black, informs me, in a letter dated February 7, 1887, that Cunningham is now a pensioner "at the rate of two (2) dollars per month for disease, and deafness of the ear."

[1] "Windage," it should be said, is a technical term used in military parlance to indicate the difference in diameter between the bore of a gun and its projectile. The word has been, perhaps improperly, adopted by writers on military surgery, in which sense it refers to the impact of the condensed air surrounding a missile passing near any part of the body.

The extent of the injury of the drum of the ear in each one of the cases reported was dependent on the distance from the shell, the facings at the moment of explosion, and the size of the external auditory canal. In some instances, as, for example, in the cases of Abbott, Clark, Goodno, Ingram, and Sinclair, the drum-heads were driven in with such force as to cause their complete destruction by death of the tissues. In some of the cases, it will be observed that partial or entire reproduction of the drum-head took place. The spontaneous cure, in most of these cases, without leaving any discharge, affords a valuable suggestion in the treatment of inflammation of the ear, as well as in operations on the organ, in healthy persons. It is believed, notwithstanding the great destruction of the membrana tympani, that the chain of ossicles has been left in every case. It is fortunate for man that great augmentation of tension, exerted either from without or from within, upon the transmitting mechanism of the ear, may be experienced without serious injury to the stapes or labyrinth.

Hearing tests employed.—The voice was employed as a test in all cases, its perception being practically the most important function of the ear of a soldier. Whereever the watch was employed, the result is noted in the history. König's rods were employed in one or more cases.

It is the experience of many officers that the vibrations of great intensity which are given off from some field-pieces and bursting shells, charged with high explosives, are more disagreeable than the heavier sounds of great guns. The metal itself vibrates under these circumstances similarly to a tuning-fork.

A very disagreeable jar is imparted to the temporo-maxillary articulation when the individual is near a great gun being fired off. This is lessened, it is believed, by standing on the toes and leaning forward. Some simple precaution, to be employed by officers and men during artillery practice, would seem very much needed, since aural shock is not only painful and distressing, but orders cannot be well heard while the confusion lasts.

There is probably no better protection than a firm wad of cotton-wool well advanced into the external auditory canal. In suggesting this protection it is believed that harm can seldom take place from pressure of air from within, since it is known that the violent introduction of air into the tympanum from the throat, by means of Politzer's method of inflation, seldom ruptures the drum-head, though, if such a volume of air were suddenly driven into the external auditory canal, the drum-head would in nearly all cases be ruptured.

The writer, in finishing this account of the aural injuries done by the explosion, would request that other observers having experience in this direction kindly communicate with him. Any knowledge that may thus be contributed would be of service to military surgeons, otologists, and others.

12 West Thirty-Fifth Street.

Acute Pneumonia in Utero.—A correspondent writes in the *Lancet* of November 6, 1886, as follows: "A patient, U. M——, was admitted to hospital suffering from acute pneumonia (whole of left lung), and a history of illness covering the four days previous to admission. She was eight months pregnant. On the evening of the day of admission her temperature was 103.6° F., and she was delivered of a female infant. The infant died in less than twenty-four hours after birth, with symptoms of acute pneumonia. A post-mortem examination showed acute pneumonic consolidation of the whole of the left lung. The mother made a rapid and good recovery. While there is ample evidence that the other acute specific diseases (so-called 'fevers') are capable of being transmitted by the pregnant woman to her offspring yet *in utero*, this is the first time I have had any evidence that 'acute pneumonic fever' could also be so transmitted."

CONGENITAL HÆMOPHILIA, WITH THE HISTORY OF A REMARKABLE CASE.[1]

By EDMUND C. WENDT, M.D.,

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For the history of this case the writer is indebted to Dr. Kate Parker, House-Physician of the New York Infant Asylum. The case occurred in the service of Dr. George B. Fowler.

Howard B—— was born at 4 A.M., November 30, 1886. His mother was a remarkably well-developed mulatto woman in perfect health. Special inquiry failed to elicit any history of syphilis, nor did a careful and searching examination give the slightest evidence of the disease, past or present. The mother's family was stated to enjoy perfect health. No cases of hemorrhage were known to have occurred in any of its members. Regarding the father, no other facts could be learned than that he was apparently in excellent health.

The mother was twenty-five years of age and a primipara. Pregnancy had progressed undisturbed to full term. The delivery was a very easy and natural process The first stage of labor lasted just six hours and ten minutes. The duration of the second stage was only ten minutes, and birth was almost precipitate. It was a vertex presentation, with right occipito-anterior position. The weight of the child at birth was nine pounds and eight ounces. The infant's appearance would have been quite normal, except for a swelling above and in front of the right ear, with purplish discoloration of the integument. Nothing unusual occurred until 7 A.M. on the following day. At that time there was a severe hemorrhage from the umbilicus, which was apparently checked, however, by the usual treatment. Two slight attacks of epistaxis followed, and some blood was also rejected by vomiting. At 11 P.M. oozing from the navel was again noticed. Although the blood seemed to come from several points, the oozing was most marked at the line of separation from the integument. In spite of all efforts to control it the bleeding continued, with but slight intermissions, until the death of the infant, on the following day, December 2d, at 4 P.M. Before death a few purpura-like spots had made their appearance on the skin of the trunk and extremities. The tumefaction above the ear had perceptibly increased in volume. Death was evidently due to exhaustion from loss of blood. The weight of the child after death was found to have become reduced to eight pounds and nine ounces.

To complete this rather brief clinical record, it should be added that there was no post-partum hemorrhage, that the mother passed through an absolutely normal childbed, and that the placenta was healthy, at least so far as gross appearances were concerned. A microscopical examination was not made.

At the autopsy, which was performed twenty-two hours after death, the following observations were made: The body of the mulatto infant appeared plump and well nourished. Cadaveric rigidity was well marked. No petechiæ or ecchymoses were visible on the integument. The right post-aural region was occupied by a doughy tumor, over which the skin was colored purplish blue.

A hard, shrunken mass, to which adhered crusts of coagulated blood, represented the soft part of the umbilical cord. At the line of junction with the integument a few small and superficial erosions could barely be made out. The umbilical vessels were carefully prepared, and, on opening the abdomen, traced into the liver and through the hypogastric arteries into the iliacs. They were patent on section, and presented no abnormality whatsoever. They contained no blood.

When the abdominal cavity was opened about two tablespoonfuls of fluid blood were collected from its different compartments. The blood was thinner, but not lighter-colored than normal. Not a single clot was

[1] Read before the Manhattan Medical and Surgical Society, January 8, 1887.

anywhere discoverable. Between the layers of the omentum quite an accumulation of blood was seen. A large patch of extravasated blood appeared under the diaphragm. Similar hemorrhagic effusions, but of less extent, were found at other points within the abdominal cavity. All the contained organs looked pale, but not shrunken. In the stomach no blood was found. The mucosa was strikingly bloodless.

The spleen was larger than normal, of firm consistency, and relatively rich in blood.

The liver was very pale, not enlarged, and not fatty. No hemorrhagic spots were found in its interior.

No inflammatory lesions were present, and no ruptured blood-vessel could be discovered here, or elsewhere in the body.

Before opening the chest the muscles were dissected away from the ribs. In this way a very large hemorrhagic effusion came to view beneath the fascia of the left pectoralis major, and extending directly into the substance of both pectoral muscles. The skin covering the region in question was not discolored.

The pericardial sac contained about one teaspoonful of blood-stained serous fluid, but only one small subpericardial effusion of blood was seen.

The muscular substance of the heart was pale and firm. The cardiac chambers of the left side contained a small quantity of thin, fluid blood. The cavities of the right side contained considerably more, but otherwise similar blood. Clots were nowhere to be seen. The foramen ovale was found closed. The ductus arteriosus was still pervious. All the valves were well formed, but appeared unusually delicate in structure. The calibre of the vascular trunks proceeding from or going to the heart was not abnormally small.

The lungs presented a beautiful and striking appearance. Numerous hemorrhages had occurred into the substance of the pulmonary tissue. The result was a mottled look, well-defined patches of bright red forming a sharp contrast to the marked whiteness of the healthy portions. The hemorrhagic islands were everywhere clearly defined by the boundaries of the pulmonary lobules, so that a mosaic-like appearance resulted. The hemorrhagic territories were of almost uniform size, only exceptionally involving more than two lobules. The bleeding must have been the result either of countless capillary ruptures or, more probably, extravasation by diapedesis.

On dissecting the scalp, in order to expose the calvarium, another very extensive effusion of blood was discovered. The tumor behind the ear, mentioned above, was found to consist of one mass of effused blood. The extravasated fluid occupied the tissues of the scalp, extending over all the bones of the skull, excepting only the left parietal part of the left temporal and the left half of the frontal bone. No blood had escaped beneath the pericranium, however, thus constituting a noteworthy departure from what is the rule in ordinary caput succedaneum. Both fontanelles were unusually large and quite soft.

On exposing the brain the vessels of the pia were seen to be very scantily supplied with blood. There was a moderate amount of clear serous accumulation in the subarachnoid spaces, especially toward the depending occipital region. The substance of the brain was of waxy pallor, and its consistency was above the normal. In the venous sinuses some fluid blood was seen, but again no clots were visible.

In trying to properly interpret this case, remarkable alike for the severity, the extent, and the very early occurrence of the fatal hemorrhages, we are confronted by all the uncertainty that pertains to the entire subject of hæmophilia—or the hemorrhagic diathesis, as it has been called. The infant whose history has just been given evidently bled even before birth. For the tumor about the ear was clearly the result of a hemorrhage that must have taken place while the fœtus was in utero. Whether any of the other extravasations noticed at the autopsy occurred before delivery is doubtful. At any rate, the condition of the effused blood makes it certain that they did not precede birth by many days, or even hours.

Hæmophilia is pre-eminently a hereditary disease; more so, probably, than any other known malady. Its history has shown that direct transmission is by no means always observed. Some of the worst cases apparently skipped one generation, to appear in the offspring of parents themselves seemingly free from all "bleeding" taint. Indeed, transmission by so-called transgressive heredity is held by some observers to be more common than the immediate parental variety. While, therefore, the parents of this infant were, so far as known, in good health, there is no reliable record extending farther back to show that bleeders may not have existed in older generations.

But there are other points connected with this case deserving our attention. An examination of the literature of hæmophilia shows that, even in bleeder-families, congenital hemorrhages, as well as hemorrhages during the first few days of extra-uterine life, have been very rarely observed. The cases of Winckel[1] appear to be about the best-observed ones of those that can be vouched for.

Perhaps it is proper to add the cases mentioned in an article on hæmophilia by Dr. Dunn, which was published in the *American Journal of the Medical Sciences*, January, 1883. This author briefly refers to a number of cases of bleeding in infancy. One child is alluded to as having bled from birth. Another "died of umbilical hemorrhage after bleeding fifteen days, dating from birth." Still another "had from birth spontaneous hemorrhages from nose, kidney, and bowel." All these cases concerned children belonging to families of bleeders. In no instance does the author give us a complete clinical record, or a description of post-mortem appearances.

Resuming the consideration of the writer's case, the question naturally suggests itself whether the assumption of hæmophilia is entirely justifiable, or whether we should not rather seek elsewhere for an explanation of the hemorrhagic phenomena observed. There is but one disease that, in the writer's opinion, can possibly be thought of in this connection—namely, syphilis. But reference to that disease will be made farther on.

Hæmophilia is so rarely brought to our notice in this country that it seems admissible here to quite briefly go over tolerably well-known ground, covering at least some of the leading facts relating to the disease.

Hæmophilia, then, or hæmorrhaphilia, or hæmatophilia, or morbus hæmaticus, or diathesis hæmorrhagica habitualis, are all terms used to denote a constitutional tendency to bleed, either in consequence of some slight traumatism or without discoverable cause—*i.e.*, spontaneously. A constitutional vice of this kind has for a long time been known to be hereditary in certain families, commonly called bleeders.

Hæmophilia is certainly not a disease frequently observed in America, nor does it appear to be at all common in other countries. It is much oftener seen among the fair-complexioned Anglo-Germanic races than among the darker types of Roman or Slavonic origin. The truth of this proposition must be maintained, even against Virchow's suggestion, that the greater prevalence of hæmophilia among the Teutonic races was only apparent, and due to the fact that the proportion of "writing physicians" (meaning actual, not potential, writers) was relatively so very large among the Germans.

According to Immermann's figures, out of a total of 219 families of bleeders Germany furnished 94; Great Britain, 52; North America, 23; France, 22; Russia and Poland, 10; Switzerland, 9; and other countries the remainder.

[1] Winckel's two cases of congenital hæmophilia, the hemorrhages occurring in new-born infants, are found in the Berichte und Studien aus dem Kön. sächs. Entbindungs Institut zu Dresden. Leipzig, 1874.

The great preponderance of male over female hæmophiles is a rather curious and a hitherto explained feature of the disease.

In 1877 Grandidier published records of 200 indisputable bleeder-families. These furnished 609 male hæmophiles and only 48 females, or a proportion of nearly 14 to 1. Dunn has collected 780 cases (including 631 mentioned by Grandidier), of which number 717 were males and 63 females, or a ratio of 11 to 1. Förster states that among the very young there is less numerical disparity between the two sexes.

As a rule, the first indication of the existence of a hemorrhagic diathesis occurs early in life. Thus Grandidier found that the initial hemorrhage took place within the first year of life 58 times in 95 well-authenticated cases. Nasse appears to be the only writer who distinctly states that hæmophilia may be the cause of fœtal hemorrhage.[1] Förster himself is of opinion that the "bleeder-disposition" is only developed after the circulatory and other changes incident to childbirth have occurred.

Eichhorst, in his "Handbook of Practical Medicine," as well as in an excellent article on the subject in "Eulenburg's Real Encyclopædie," says that the congenital form of hæmophilia is allied to the hereditary disease. According to this accurate observer, congenital hæmophilia includes those cases in which children are bleeders, although the parents come of healthy families. Very little is known concerning the causes of congenital hæmophilia. Among those mentioned are marriage between blood-relations, phthisis, scrofula, rheumatism, or gout in the parents, and fright during pregnancy. It will be seen from this enumeration that syphilis is conspicuous by its absence from Eichhorst's list of causes. He also states that children sometimes fall victims to the disease immediately after birth, as the result of uncontrollable hemorrhage after tying the umbilical cord. Several authors have denied this, and Lange positively asserts that umbilical hemorrhage is not observed in consequence of hæmophilia. It is certainly a very exceptional occurrence. In the writer's case it will be remembered that the umbilical hemorrhage was not controllable, and became a prime factor in determining an early fatal issue of the disease.

The hemorrhagic diathesis generally lasts the entire lifetime of an individual. While it commonly leads to death at an early age, Simon and others have recorded cases where the patients lived above seventy and even ninety years of age (Simon, *Récherches sur l'hémophilie; Thèse de Paris*, 1874). Sometimes the disease is unsuspected until the extraction of a tooth or some traumatism reveals its presence by a dangerous and intractable hemorrhage. Circumcision has repeatedly led to death in this way. Scratching, leeching, cupping, scarification for vaccination, and even the application of a vesicant to the skin, have each had fatal consequences. But in most cases of hæmophilia the bleeding takes place spontaneously, as well as in consequence of some injury. Thus there may be epistaxis, profuse menorrhagia, hæmaturia, intestinal hemorrhage, hæmoptysis, bleeding from the mouth, bleeding into the auditory canal, or from the caruncula lacrymalis, or into the joints, or hemorrhage of the brain and its meninges. In a word, no tissue or organ supplied with blood can be said to be exempt from hemorrhagic accidents in this disease.

Regarding the true nature of hæmophilia nothing definite is known, and it would be far from profitable to recite the various views that have been advanced at different times to account for its morbid manifestations. Suffice it to say that opinions have hinged mainly on whether hæmophilia was dependent upon faulty blood-composition or upon abnormalities in the structure of the vessels, or upon a combination of both conditions. It is reserved for future investigations to shed light upon this obscure field of pathology.

The prognosis and treatment of hæmophilia are not pertinent to this article. It remains, therefore, to inquire whether the case related above cannot be better explained by placing it under the head of hemorrhagic syphilis of the new-born. That syphilis may lead to multiple hemorrhages in the new-born is to-day doubted by few. But the subject has only recently been carefully studied. Now, it appears that extravastion of blood into the tissues has never been observed to be the only sign of hereditary syphilis. In the writer's case, it will be remembered, no other sign of disease was discoverable.

Behrend, in 1883, described a condition to which he gave the name of hemorrhagic syphilis of the newly born. Kassowitz, Deahna, Schütz, and others confirmed his observations; while Petersen and several others opposed them, and to this day deny the existence of a hemorrhagic diathesis due to hereditary syphilis. The most recent, and probably the most important, contribution to this subject is contained in a paper read at the Fifty-ninth Congress of German Naturalists, held at Berlin, and published in the *Wiener Medizinische Wochenschrift*, November 6, 1886. Dr. Mracek, the author of the paper, is a lecturer on syphilis at the University of Vienna. His studies and observations were made under the supervision of Professor Kundrat, and extended over a period of four years. It is not necessary to follow the author into the details of his investigations. But there can no longer be any reasonable doubt that there is such a condition as "syphilis hemorrhagica neonatorum," or a hemorrhagic diathesis due to hereditary syphilis. It is equally certain, however, that these cases show numerous and well-marked anatomical lesions, chiefly concerning the blood-vessels of the body. As no such lesions were present in the writer's case, it must for this, if for no other reason, be excluded from the group of syphilitic affections of the new-born. It will have to go on record, therefore, as an instance of congenital hæmophilia, thus justifying the selection of the title for the present communication.

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[1] Förster, in Gerhardt's Handbuch der Kinderkrankheiten, vol. iii., p. 240.

A SHORT STUDY OF BERIBERI:

With a Report of Cases Observed in Bellevue Hospital.[1]

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I feel that this paper must begin and end with an apology. The time allowed me for its preparation was short, and it is possible that some omissions may be found in it. The article is based largely on the papers by Scheube, and I have added to his observations any other facts I was able to obtain from other authors.

Synonyms.—Kak-ké, Beriberia, Sleeping sickness, Panneuritis endemica, Neuritis multiplex endemica, Endemic Multiple Neuritis.

Geographical distribution.—The disorder is found in portions of China and Japan, Ceylon, portions of India, Burmah, the Malay Peninsula, many islands near Asia, Brazil, some parts of Central America, the West Indies, Australia, and the Sandwich Islands.

The disease prevails endemically in these countries, and occasionally breaks out in epidemics.

The season of greatest prevalence is, according to most authors, during the hot months, when there is most decaying vegetation. In general, it seems that at seasons when malarial fevers are most common beriberi is

[1] Read before the Section on Practice of the Academy of Medicine, January 18, 1887.

also most common. Scheube states that in Japan most cases occur during the hot months of July, August, and September.

Conditions of soil.—On this point there is difference of opinion. Scheube thinks that overcrowding in cities is most favorable to the propagation of the poison, while Maclean seems to think that marshy country-districts with bad water form a good soil for it. Scheube states, and gives examples to prove, that in houses newly built on previously open ground, in or near infected cities, beriberi is very apt to appear as an epidemic.

Nationality, sex, age, occupation.—Natives in infected districts are more frequently attacked than foreigners. Males are much more often attacked than females. The disease is much commoner in adolescence and early manhood than in childhood or advanced life. It attacks all classes, but seems commoner among those who are living on poor food, and those whose occupations are sedentary, than in well-fed people who lead an active life.

Bad food and water certainly seem to predispose to the disorder, and the same may be said of anything which tends to lower the vital forces, as acute diseases, etc.

The determining cause is unknown. Certain authors think that the disease is of bacterial origin; a view which has some probability. Others, again, believe that the disorder may be the result of an unknown, but not living, specific poison. Whatever the poison is, it seems to be portable, since epidemics occur on ships, far from land, sailing from infected ports. The disease either is not contagious or is but slightly so. It is not proved, but it is probable that one case may infect a neighborhood and thus indirectly cause other cases. When epidemics occur on ships, they may be possibly the result of the poison carried in food or water, or it is possible that the infection may occur on land and the disease have a long period of incubation. The ship's crews which have suffered in this way have usually been subjected to bad hygienic surroundings, or had bad food or water, or the voyages have been protracted by storms.

The period of incubation is of unknown duration.

Symptoms.—The most characteristic symptoms of beriberi are dropsy and paralysis. In some cases the dropsy occurs alone, or at least with very slight nervous disturbances; in others the nerve-symptoms occur alone, or with but slight dropsy; and in some cases both occur simultaneously in a pronounced manner. This has led authors to describe a "dry," "wet," and "mixed" form. It must be remembered, however, that there is no sharp dividing line. Cases with predominant nervous symptoms often suddenly develop dropsy, and *vice versa*, either of the simple types passing into the *mixed* type. It is also possible for the œdema of mixed cases to subside, leaving only the paralysis behind.

The disease sometimes runs a very mild course, of which the duration may be short or long. Occasionally with pretty pronounced symptoms it pursues a slow march; sometimes it is very acute in its onset, and is rapidly fatal. If a patient be suffering from the more chronic type of the disease, an acute outbreak may at any time set in and cause death.

The onset of the disease may be marked by the occurrence of fever and symptoms of bronchitis, coryza, or catarrh of the stomach or intestines (Scheube). Many cases do not present these initial symptoms, and many authors make no allusion to them. The characteristic symptoms of the disease, in mild cases, are weariness and aching pain, with a sense of weight in the legs, with or without a certain amount of numbness in the feet; sometimes an intense desire to sleep. With these symptoms, or, in some cases, before they appear, a slight amount of œdema of the lower extremities is noticed. The œdema is not a necessary part of the disease; but, on the other hand, cases occur with œdema as the only symptom. Palpitation of the heart, some dyspnœa, epigastric or præcordial oppression, more or less anæmia (which is not constant, however), together with some mental depression, are the most marked remaining symptoms. This mild type may last for weeks, or even months or years, and it may pass into one of the more severe forms or end in complete recovery.

The severe forms differ in degree, but not in kind, from the mildest. In the type with predominant nervous symptoms, sometimes called the "dry," there is a pretty complete paralysis, with rapid atrophy of the muscles, usually of the lower extremities. The paralyzed muscles are occasionally hyperæsthetic during some period of the disease, and the hyperæsthesia may be very marked. There is frequently tenderness along the course of some of the nerve-trunks. The upper extremities may be affected like the lower, but the paralysis is rarely so complete. The abdominal muscles may also share in the paralysis. The sensorium is generally clear. Such cases may slowly recover, or may develop dropsy and thus pass into the mixed form, or die, usually from some complication, as pleurisy, endocarditis or pericarditis, or with dyspnœa and the symptoms of the malignant forms.

In "wet" cases there are the same symptoms of heaviness and weariness in the legs, but soon general anasarca, with effusion into the pericardium, pleural cavities, and peritoneal cavities, occurs. There is marked diminution in the urine. Cardiac palpitation, weak pulse, dyspnœa, præcordial or epigastric oppression, and anæmia, real or apparent, are all marked. Sometimes a profuse flow of urine, followed by disappearance of the dropsy, is noted. Paralysis is not often well marked. After the dropsy disappears this latter symptom may remain, or it may disappear before the former. Considerable emaciation occurs. Such cases may recover wholly or partially, or may develop acute symptoms and die.

In the so-called mixed form we have well-marked paralysis, with well-marked dropsy.

There remains to be described the malignant form. In this, with or without œdema, prostration, weak pulse, palpitation of the heart, dyspnœa, intense præcordial or epigastric oppression, vomiting (in some cases), great mental anxiety, restlessness, and diminished or suppressed urine, are symptoms which may attack a previously healthy man, or one already suffering from mild beriberi, and cause death in a few hours or days.

The prognosis in the malignant form is very bad. In the others it is pretty good. Relapses are common.

I must detain you to look over again some of the principal symptoms.

The nerves most commonly affected are those of the lower extremities, but those of the upper are quite frequently involved to a greater or less degree. The paralysis is not always the same in degree on both sides, if both legs are affected. Scheube has seen monoplegia and hemiplegia. The facial, glosso-pharyngeal, vagus, hypoglossal and phrenic, spinal accessory, and trigeminus have been observed to be affected. I find no record of lesion of the optic nerves.

Tactile and pain sensibility are usually diminished. Temperature and muscle-sense normal (Scheube); cramps and contractures occur in various muscles, most commonly in those of the calf. Various abnormal sensations in the limbs are common, but they are usually not to be described as pain. Fibrillary contractions of the diseased muscles are quite often seen. Trophic changes in the skin seem not to occur. The same seems true of the joints.[1] The *muscles* undergo rapid atrophy and degeneration, and may show sclerotic changes. The electrical reactions are those of degeneration, save that the galvanic excitability is always *diminished*, not increased at any time. Hiccough occurs toward the end of some fatal cases (Maclean). The bladder and rectum are never paralyzed.[2]

[1] A case of joint-lesion is described by Scheube, which is possibly of nervous origin.

[2] A rather slow flow of urine is noted in some cases.

Blood and circulatory system.—Anæmia is usual, and is often extreme. Some cases show a marked diminution in the number of red disks. Exact information in regard to the amount of hæmoglobin I have not obtained. In one of my cases, with 4,500,000 disks to the centimetre, there seemed some diminution in the hæmoglobin—the blood was paler than normal—but I was unable to estimate it accurately until late in the disease. The white cells seem relatively, but not absolutely, increased in number.

The pulse is generally weak, and may be dicrotic; the tension is low; the heart-action feeble, sometimes irregular. The circulation in the extremities is feeble, and these are cold; the frequency is above normal. Beriberi may, however, exist with a normal pulse and heart-action. Dilatation of the heart, especially the right chambers, is common; hypertrophy rare. Anæmic murmurs are often heard. Accentuation of the second sound, especially the pulmonic, is often noted. In one of my cases there was reduplication of the second sound at the base. Palpitation of the heart, aggravated by exertion, seems to be one of the commonest symptoms. Few cases occur without more or less oppression in the præcordial or epigastric regions.

Dyspnœa on exertion, or without such cause, is almost always present to a greater or less degree. *Orthopnœa* is sometimes observed. Severe dyspnœa occurs in acute outbreaks. It has been suggested that this symptom may be due to a lesion of the nerves of the lungs.

Disorders of the stomach and intestines.—Hebersmith notes a marked increase of appetite in his cases. Constipation is the rule, diarrhœa the exception. Thirst is in some cases urgent, in others not complained of. Vomiting is rare; many authors do not mention it at all. Various dyspeptic symptoms are noted in certain cases. The tongue is usually pale. Maclean states that in severe cases it may become black and dry.

The urine in "wet" cases is much diminished, or almost suppressed; sugar and albumen are absent according to most observers. In acute cases, before death, Scheube found albumen and casts and renal detritus. In "dry" cases the quantity of urine is often somewhat diminished. In "wet" cases the occurrence of free diuresis will frequently be followed by subsidence of the œdema. When the urine is diminished both the water and solids are lessened in amount.

The skin shows no specific eruptions, though purpuric spots are sometimes observed. There is none of the tendency to gangrene and suppuration observed in curvy.

In regard to the dropsy, enough has been said, save to mention that localized œdemas of portions of the subcutaneous tissues occur in some cases.

The temperature is usually normal or subnormal. Fever occurs in some of the cases.

The general nutrition usually suffers markedly. There is not only atrophy of the diseased muscles, but also emaciation. Swelling and induration of certain muscles and tendons is sometimes observed.

Pathological anatomy.—The blood remains fluid for some time after death. Fatty degeneration of the heart was found by Scheube in all his 17 cases. He also found dilatation of the right heart in 14 cases, or 70 per cent.; of both sides in 4 cases, or 20 per cent.; hypertrophy of the left ventricle in 5 cases, or 25 per cent.; of both ventricles in 4 cases, or 20 per cent. Endocarditis (acute simple) is noted in a few cases. The spleen is a little enlarged in most. Scheube also notes parenchymatous degeneration of liver and kidneys, and sometimes accumulations of nuclei in the stroma of these organs. Small abscesses have been found in the liver. General anasarca, with dropsy of the serous cavities, is common. The nerve-lesions consist of inflammation and degeneration of many peripheral nerves, the cord and brain remaining normal. The changes sometimes noted in the cord seem always post-mortem alterations. Certain muscles show degenerative changes. No lesions of the blood-vessels can be shown.

Pathogeny and pathological character.—Beriberi is probably an infectious disease. It resembles in a superficial way pernicious anæmia and myxœdema. It is hardly necessary to point out the differences between it and these disorders. It resembles still more closely some forms of scurvy. In the latter disease neuritis is rare if it is ever met with.

The points which render its infectious nature probable are its lesions and its occurrence in epidemics. The effort to show that these epidemics depend on conditions favorable to the development of scurvy fails, since people in the most varied walks of life and living on the most varied food suffer from it. Any conditions which tend to produce scurvy certainly favor the occurrence of beriberi, but they do not produce it by themselves.

How the poison is introduced into the system, whether by water, air, or food, is unknown. The period of incubation is equally unknown, but there is considerable evidence to show that it is long, possibly extending over several months. The relation of the nerve-lesions to the symptoms is easy to understand as far as the paralysis is concerned. It is also comprehensible that lesions of the vagus may produce the dyspnœa, and possibly the rapid heart-action. The dyspnœa is no doubt increased by hydro-pericardium and pleural dropsy, when these exist, and perhaps in cases by œdema of the glottis.

The dyspnœa may be further increased by lesions of the phrenic. Perhaps, also, the blood state may be a factor in its production. Whether the sense of weight in the epigastrium may be the result of vagus disease, I do not know.

The occurrence of dropsy is by no means easy to explain. We must remember that general anasarca, with ascites, pleural and pericardial effusion, may occur in beriberi within twenty-four hours of the onset, if some of the histories are to be believed. The causes which occur to me, any or all of which may take part in its production, are interference with the kidney-functions, rapid alteration in the condition of the blood, aided, perhaps, by a weak heart. Vascular changes cannot be demonstrated. Obstruction to the return through the lymphatics may possibly exist. Can there be any changes in the vasomotor nerves which will produce dropsy? Is it not probable, at least, that the interference with renal functions may be due to deranged action of the renal nerves?

In regard to the bacterial origin of the disease, I have not yet found trustworthy evidence. Bacteria are described, but I have not been able to obtain access to the original papers describing them, and the abstracts I have read do not seem to give promise of much, with the possible exception of the report of the Dutch commission. The commission reports the discovery of a bacillus similar to, but smaller than, anthrax, found in the heart-muscle, blood, nerves, and fluid from the serous sacs. As the synopsis of the report in the *British Medical Journal*, (December 4, 1887) is short, we cannot be sure of the methods employed.

In regard to *treatment* there is but little to say. Tonics, antiscorbutics, good food, and electricity are recommended. Two mixtures, known as *treuk farrook* and *oleum nigrum*, the former of unknown composition, and the latter an empyreumatic oil, from the seeds of a plant growing in India, enjoy much reputation in that country. Tapping and aspiration may be called for in cases.

Cases observed in Bellevue Hospital.—I have to thank Dr. Ely and Dr. Freeman, of the house-staff of Bellevue Hospital, both for collecting facts and for their assistance in examining the cases whose histories I am about to relate.

The ship Henry S. Sanford lay in Hong-Kong for about two and a half months, having arrived there from Newcastle, Australia, with coal. The captain and some of the crew remained with her. She shipped some new men, including our cases, at Hong-Kong. She sailed

with all hands well, on July 20, 1886. She went through the Straits of Timor, having passed the Philippine Islands. The Cape of Good Hope was rounded, and the first stop made was at the island of Fernando de Noronha, where they remained six or eight hours, and sent ashore for a doctor. They reached New York December 9, 1886. The food and water were both rather unusually bad, so that the men complained of them. The water used during part of the voyage was collected from the deck, which was never clean, and on which two cats and a dog were allowed to defecate. The water was stinking and contained little animals. Breakfast: Bread, containing maggots, salt meat, and coffee. Dinner: Bread, salt meat, and potatoes which soon were rotten. Supper: Bread and salt meat. Dried apples twice a week. One sailor said the food was not much worse than usual, the other that it was very bad for an American ship. The food was badly cooked. The weather was fine.

There were eighteen souls on board. Of these twelve were ill. Those who escaped were the captain's wife and two daughters, the Chinese cook, the steward, and a Russian prisoner—six in all.

The captain was the first to fall ill, three months out. He had dropsy and was unable to leave his berth, whether from paralysis or prostration is not known. He died shortly after leaving Fernando de Noronha.

The carpenter had a fight with the mate, and was laid up for a while in consequence. He was taken ill with apparently ascites alone; no paralysis nor œdema of the feet. He died.

Seaman B—— was next taken. He had bloody diarrhœa and died in Bellevue Hospital. He was the only man who had any bleeding. He had œdema, probably no paralysis. He died with dyspnœa, very pronounced, a few hours after his admission. The autopsy showed general anasarca, with pleural, pericardial, and peritoneal effusion. There was slight old, and very slight recent, endocarditis.

Seaman A—— was sick three weeks. Œdema, and paralysis questionable. He took much medicine, and died, having had a great deal of vomiting.

After this all the crew, with the exceptions noted, were sick in the same way. They had weakness and heaviness of the legs, more or less œdema, and some had dyspnœa.

Case I.—Henry D——, aged thirty-one, sailor, England, admitted December 10, 1886. Sick forty-five days. Feet swelled then, and he suffered from pain and weariness in the calves of the legs and became very easily tired. He was constipated. He did not suffer much, and continued to work until fifteen days ago, when the swelling became extreme and extended up the legs and thighs and involved the genitals. At this time he developed a dry cough, dyspnœa (which soon became severe), and some palpitation of the heart.

For past two days urine has been very much diminished; he has passed a little every hour. He has lost considerable flesh since illness began.

Physical examination showed marked general anasarca, great pallor; no signs of disease of lungs; no fluid in pleuræ, or peritoneum, or pericardium. Heart second sound at base reduplicated and loud; pulse full, slow, and strong. Temperature, normal. Urine acid, amber-colored; sp. gr., 1.016; no albumen. Liver and spleen normal size.

December 11th.—Four oz. urine; œdema less.

December 12th.—Orthopnœa and some dyspnœa. Four oz. urine.

December 13th, at 6 A.M.—Severe dyspnœa, which was followed by death at 8.30. The man was weak. The existence of actual paralysis was not established. There was numbness of the feet and legs on the day before death.

Autopsy (by Dr. Prudden).—A well-built, well-nourished man. General anasarca. Abdominal cavity contains a large amount of clear, yellow serum; peritoneal surface appears normal; right diaphragm at lower border of third rib. Moderate amount of clear, yellow serum in right pleural cavity; extensive adhesions over left pleura. About 3 oz. of serum in pericardial sac; visceral pericardium, moderate old opacity. Heart: Right ventricle contains a small clot; mitral valve in places slightly thickened; other valves normal; very slight endocardial thickening over papillary muscles; heart muscle a little pale; moderate fatty degeneration of ascending aorta. Blood in general fluid. (Note by Roosevelt: Blood was not apparently paler than normal.) Lungs: Right pleura apparently normal; right lung bronchic, congested, contains muco-pus; emphysema of middle and lower lobe; in pleura of upper part of lower lobe are numerous pins'-head, dark red, petechia spots; left lung everywhere adherent; some old adhesions, but most are fresh fibrine, some of them are apparently becoming organized; over the upper part of the lower lobe the fresh adhesions are thickest; the pleura here is besprinkled with translucent miliary nodules; the pleura contains numerous larger and smaller petechiæ; bronchi congested, mucus increased; lower lobe rather dry; upper part of upper lobe congested and œdematous; no tubercles in lung; in axillary line, on third and fourth ribs, is a subpleural, dense, tough mass of tissue, about three inches long by two inches wide; in its centre is a brown, soft mass. Spleen six inches long, four and one-half inches wide, and correspondingly thick; old adhesions over surface; cut surface shows an unusual amount of connective tissue. Left kidney a little small; capsule slightly adherent; thickness of cortex normal; markings regular and very plain. Right kidney normal. Part peritoneal tissue deeply œdematous. Stomach: mucous membrane red; otherwise normal. Bile-duct patulous. Liver about normal size; surface shows depressed areas; cut surface normal. Intestines normal; one roundworm found. Pancreas normal. Suprarenal capsules normal. Mesenteric glands swollen. Brain and membranes and vessels appear normal. Glottis: mucous membrane a little swollen, suggesting œdema, now disappeared. A little petechial spot on posterior surface of epiglottis. The nerves were not examined.

Case II.—James L——, aged forty-nine years, sailor; Sweden; admitted December 11, 1886. Six weeks ago patient was taken sick, and has been unable to work since then. First symptoms were stiffness and soreness about the ankles, followed by slight swelling of the legs. He became quickly prostrated. For last month much troubled with dyspnœa and orthopnœa, and marked palpitation of the heart and epigastric oppression. Three weeks ago began to have a cough, and expectorated a little liquid containing pellets. He has suffered from some headache and slight blurring of the sight; no muscæ volitantes. From the beginning of his illness his appetite was poor, his bowels constipated, he had occasional nausea and vomiting, and he slept badly because of dyspnœa. He noticed nothing peculiar about his urine.

Physical Examination.—Well-nourished muscular man; complexion pale, with slight yellowish shade of skin; sclerotics normal; tongue pale; gums rather red and soft; a yellow, dirty deposit about one tooth; no tendency to bleed; general subcutaneous œdema; lower extremities markedly œdematous, and genitals slightly so; visible pulsation of carotids and at the sternal notch; pulse small, slow in rise and fall, and strong. Heart: Apex in normal position; area of superficial and deep dulness normal; low-pitched, blowing, systolic murmur, audible over the whole base of the heart, most intense over the third left costal cartilage, not heard in vessels; second sound at base loud and rough, suggesting reduplication; venous hum in the neck. Lungs (both lungs anteriorly): dulness, prolonged expiration, subcrepitant râles, and coughing, from apex to third rib; behind (both lungs from angle of scapulæ down), flatness,

absent voice and breathing, with exaggerated voice at upper level of flat area. Liver and spleen normal size; no signs of ascites. Ophthalmoscopic examination: Normal fundus. Blood contains a nearly normal number of corpuscles; the color is a little pale; a scanty, pink, papular eruption on shoulders and back; no hemorrhages into skin or mucous membranes. Urine amber, acid; specific gravity, 1.014; no albumen.

Ordered iron and bitartrate of potassium, and occasional purges and fruit.

December 14th.—Forty ounces urine in twenty-four hours; somewhat less œdema; 4,500,000 corpuscles in a centimetre of blood; oppression in chest and epigastrium marked; not much dyspnœa.

December 15th.—Fifty ounces of urine; œdema less; marked paresis of lower extremities is noted; patellar reflex diminished.

December 16th—Fifty-eight ounces of urine; marked paralysis of flexors of the feet; slight anæsthesia of feet.

From this date until December 29th the œdema steadily diminished, the urine averaging about eighty-five ounces *per diem*. Nothing noteworthy occurred. There had been no fever up to this date.

December 29th.—The temperature began to rise and reached 105° that evening. It continued slightly above normal until January 3d, when it again rose, reaching 103° that evening. It fell slowly, and since then has remained practically normal. The patient felt no worse during this run of fever, and there seemed nothing on physical examination to account for it.

On January 3d some difficulty is noted in starting to pass water. When the stream comes it is normal.

January 10th.—Improvement in strength of legs. No anæsthesia; no œdema. Legs have grown thinner. Some tenderness in calf muscles. No fluid in chest. No heart murmur. Tender points found over both sciatic nerves between the ischial tuberosity and the trochanter, also over both median nerves at the wrist, and over the upper part of the outer border of the supinator longus muscle in both arms. It is not known that these points did not exist before.

The patient can stand without much support. When walking, with assistance, his feet droop and the toes drag until the step is nearly completed, when by a jerk of the thigh he throws the foot clear of the floor. The toes touch the floor first as the foot is put down. When lying in bed the feet are extended, and the soles turned somewhat in. The toes are partly flexed, from paralysis of their muscles. There is no spasm. The patellar reflex remains slight but distinct.

January 15th.—Strength somewhat better. Three days ago the potass. bitartrat. was stopped. To-day there is a little œdema of the ankles. Bitartrate ordered again.

January 17th.—There is complete paralysis of the flexors of the foot and extensors of the toes. The calf muscles still have a little strength. There is considerable atrophy of all the muscles of the legs. The thigh muscles are also somewhat atrophic and paretic. Arms not affected. There is slight œdema over the external malleoli of both sides. No fluid in either chest or abdomen. Heart-sounds normal. Still some oppression in epigastric region.

Dr. Seguin kindly made an examination of the patient, and found a quantitative diminution in electric, with sluggish contractility of all of the paralyzed muscles.

Specimens of the blood of the patient were frequently examined for bacteria, with negative results, as far as the microscopical examination would show. Two sterilized gelatine tubes were inoculated by me with blood, the usual precautions being observed. A Koch syringe was also filled with fluid from the pleural cavities. These were submitted to Dr. T. M. Prudden, whose report on them is as follows:

"The specimens received from Dr. Roosevelt were two gelatine tubes inoculated with blood, and a sterilized Koch's balloon syringe filled with reddish turbid fluid from pleural cavity. Gelatine culture-plates were at once made from the blood specimens, and four gelatine plates from a small quantity of the pleural fluid. Six agar-agar plates were also made from the pleural fluid, put into the thermostat, and kept, with frequent examinations, at a temperature of 36.5° C., for eight days. The gelatine plates were kept at about 25° C. for the same time. In none of the plate cultures was there any bacterial growth whatsoever. A large number of cover-glass preparations was made in the usual way from the pleural exudation, and neither by the ordinary fuchsine and gentian violet staining, nor by Gram's method, could bacteria of any kind be detected.

"Thus the result of both the morphological and biological methods of examination of the pleural exudation, and the biological examination of the blood was entirely negative."

My attention was called by Dr. Ely to a condition of the red blood-disks observed in a number of fresh specimens when examined with a high power. Numbers of the corpuscles showed in their centres colorless portions which were of various shapes. Some were round, others were in the shape of a letter S, others were oblong, or dumb-bell in form. Beyond this nothing peculiar could be seen in the blood by the most careful examination. The earlier specimens examined showed perhaps a rather scanty fibrin network, and a somewhat diminished tendency of the disks to form rouleaux, but the correctness of this observation is rather doubtful. An estimation of the hæmoglobin, made June 10th, showed a normal amount. Gower's hæmoglobinometer was used.

Through the kindness of the physicians of the Brooklyn City Hospital, I am enabled to state that the mate of the vessel, who was treated there, suffered œdema and coldness of the feet, with weariness and numbness. He was not laid up. He had also cardiac valvular disease, apparently of long standing. He asserts that all the sick men suffered in the same way.

The question naturally arises, are the cases beriberi? One expects to find scurvy in ship epidemics. We had here certainly conditions which favored and might produce scurvy. As against the diagnosis of scurvy, I offer the following points: One man only bled, and he had only a bloody diarrhœa. There was no bleeding from the gums in any case. The condition of the gums in Case II. was no worse than that often seen in people who use no tooth-brush. The petechial spots observed in the pleura of Case I. are not much of an argument in favor of scurvy. Paralysis, as far as I can ascertain, does not occur in scurvy. Scurvy, however, may occur, with œdema as the most prominent symptom. The *captain was the first man ill.* This is a fact of importance when we think of the probability of scurvy. Finally, the mode of death of Case I., and the complete symptoms of Case II., are singularly like beriberi. The ship sailed from an infected port, and the food and water on her predisposed to an outbreak of beriberi as much as scurvy.

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DR. L. A. SAYRE has been elected chairman of the Orthopædic Section of the New York Academy of Medicine.

Progress of Medical Science.

IGNIPUNCTURE AS A METHOD OF SURGICAL TREATMENT OF CHRONIC CERVICAL ADENITIS.—Dr. Dumenil reports nine cases of enlarged glands of the neck among soldiers treated by the introduction of a platinum wire into the gland and the practice of galvano-cautery (*Philadelphia Medical Times*, November 27, 1886). In some cases there was a discharge of caseous matter and free suppuration for a few days; in others this did not occur. In both groups of cases the glands rapidly underwent resolution, and only a trifling scar was left by the operation. Although the most radical and rapid method of removing these glands would be by the surgeon's knife, which may now be done with antiseptic appliances even by the most timid, there still are cases in which deep cauterization has the advantage; for instance, where the patient recoils from ablation, or where the tumors are multiple. In case of doubt as to the malignant character of a tumor in these regions, probably prompt extirpation would be the most advisable plan of treatment. At the present day this affection is no longer considered as a strumous engorgement or scrofulous adenitis, but as a local tuberculosis. The lymphatic glands of the neck receive the lymphatic vessels coming from the buccal, nasal, and pharyngeal cavities, and are specially liable to receive infectious particles which are carried by the air. The numerous diverticula which are met with in these regions, and the frequent lesions, particularly of the gums, constitute ports of entry into which the infectious elements may enter with the greatest facility. The marked frequency among soldiers is due partly to bad hygiene, and particularly to neglect of the bucco-pharyngeal cavity. As the affection is found very frequently among quite vigorous subjects whose general health is good, and in whom no hereditary predisposition exists, it appears evident that the local conditions are quite sufficient to explain the production of tuberculous adenitis. In making the cauterization, a filiform galvano-cautery surmounted by a button was first employed, but afterward was replaced by a simple platinum point, which was made to penetrate to the centre or traverse the tumor in one or more directions. Cold compresses were then applied. Anæsthetics were not needed. In all the cases except one the ignipuncture gave satisfactory results. The exceptional case passed from observation without having shown any diminution in the glands, but his general health remained good. In almost all the cases the glands were in the way of becoming caseous, and it is in this condition that good results have been the most rapid and the most striking.

CONDITIONS WHICH AGGRAVATE SYPHILIS.—Fournier maintains that certain physical conditions in the person infected have more to do with the gravity of syphilis than the quality of the syphilitic virus. These conditions he discusses as follows: 1. Alcoholism. A powerful factor in increasing the virulence of this affection, favoring the spreading and increasing the intensity of the cutaneous lesions; producing severe symptoms, tertiary in character, early in the secondary stage; creating special types of eruption, malignant, and involving large areas of skin surface, causing more frequent outbreaks of the syphilides, depressing the system, and finally predisposing to early nervous manifestations, and causing deposits in the brain and spinal marrow. 2. Age. Syphilis is always severe at the two extremes of life. In the infant the disease, whether inherited, congenital, or acquired, is very frequently fatal, in striking contrast with its benignity in the child two, five, or six years of age. In the adult it is usually mild. After fifty or fifty-five years the disease begins to be severe, and in old age it is extremely virulent. 3. Scrofula and tuberculosis act on syphilis, and give rise to special symptoms, and at the same time syphilis exerts an unfavorable influence on those diseases. In those cases the syphilides have a moist, suppurating, and fistulous character; ocular, osseous, and articular lesions are frequently present; and the larynx, pharynx, and nose are early and deeply involved. In scrofulous subjects a particular mixed kind of inflammation of the glands is noticed, and in patients with tuberculous tendency pulmonary lesions are very often hastened. 4. Malaria also predisposes to grave forms of syphilis, as seen in those affected with malarial toxæmia. 5. All agents which depress the vital economy can serve as factors of virulence in syphilis, such as extreme poverty, bad hygiene, insufficient alimentation, prolonged lactation, fatigue, mental worry, etc.—*Quarterly Compend. Med. Sciences.*

THE BLOOD AT BIRTH.—Dr. F. Krüger, of Dorpat, has been investigating the condition of the blood of the fœtus at birth, and comparing its properties and composition with the maternal blood. The subject has been studied before. In some respects the present research confirms the previous ones—notably those of Becquerel and Rodier. Like those authors, Krüger finds a very slight comparative increase in the total solid constituents of the blood at this early period of existence; but he shows that in fibrine fœtal blood is markedly deficient, viz., about one-third of that contained in maternal blood. The amount of hæmoglobin is about the same as that of maternal blood, but it increases in quantity in the infant for some time after birth. Unlike the adult, there is no notable difference in the composition of blood in the two sexes. Fœtal blood at the moment of birth has a great tendency to coagulate, but coagulates slowly, *i.e.*, the process begins early, but continues for a long time before it is completed. Inquiring into the reason of this, he directed attention to the factors which, according to Schmidt, are essential to coagulation, viz., the leucocytes and blood-plasma. Three possibilities presented themselves: either there is a diminished activity of the blood-plasma in causing the liberation of "ferment" from the corpuscles, or the number of leucocytes must be less than in the adult, or these corpuscles part with the ferment less readily. On the first hypothesis, coagulation ought not to be quickened on the addition to the plasma of more lymph-corpuscles; but the contrary is the case. Nor is there any diminution in leucocytes, the absolute and relative number per cubic millimetre being the same as in the adult. It is concluded, therefore, that the reason of the slowness of coagulation of fœtal blood depends on the nature of the white corpuscles, and their slighter readiness to break up.—*The Lancet.*

TUBERCULOSIS OF THE BLADDER.—Tuberculosis of the bladder is, according to Guyon, relatively frequent. Dr. Boursier, assistant to Guyon, has collected thirty-seven cases. According to this author, tuberculosis of the urinary receptacle can show itself under two forms, primary or secondary. In the first case the malady is marked by frequent desire to pass water at night. The patient gets up three or four times; pain is felt during the act of evacuation, and especially at the close. With the last drops of urine appear often, and in a more advanced stage of the disease, small clots of blood. This hæmaturia is nearly always the indication to consult the medical man. Micturition, which is so frequent and often imperious, is, as has been already said, attended with a burning sensation, which remains a considerable time after, and often excites spasm of the neck of the bladder, thereby producing exceedingly painful retention. At other times the patient will be troubled with incontinence, which as often results from simple over-distention of the bladder, from the fear of the patient, who seeks to delay the emission as long as possible. However, the author thinks that the incontinence observed in children might be the result of tuberculosis of the bladder. The duration of the affection is very variable — five, ten, fifteen, or twenty years.

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THE EFFECT OF EXCESSIVE ILLUMINATION UPON THE EYE.

THE exposure of the eye to intense light has been attended with many curious and unfortunate results. In the case of Professor J. Plateau, of the University of Ghent, who while trying to observe the effects of irritation of the retina gazed steadily at the sun for twenty seconds, a chronic irido choroiditis developed, which ended eventually in total blindness. Dr. J. A. Andrews, in an article upon this subject (*Trans. of Amer. Ophthalmol. Soc.*, 1886), collects a number of cases in which choroiditis and retinitis occurred in persons who had observed an eclipse of the sun. The single flash of a sun reflector has been known to cause retinitis. Scotomata, amblyopia, and other temporary visual disturbances of a functional character have been frequently noted. M. Reich has described a curious epidemic of snow-blindness which occurred among a body of laborers engaged in clearing a way through masses of snow which obstructed the road between Passanaur and Mleti, in the Caucasus. The rays of the sun, reflected from the vast stretches of snow on every side, produced an intense glare of light, which the unaccustomed eye could not support without the protection of dark glasses. A few of the sturdiest among the laborers were able to work with impunity, but the majority, and especially the weakly and anæmic, suffered severely in their eyes, in spite of the various devices to protect them from the light. Among seventy strongly marked cases, thirty were so severe that the men were absolutely unable to continue their work or to find their way home. They were collected in a covered place, where Reich found them on his arrival prone on their faces, striving to hide their eyes from the light, and crying out from pain. Photophobia was present in all the cases. Hyperæmia of the conjunctiva, with more or less injection of the ciliary vessels, and even chemosis, was found in all severe cases. Recovery was gradual, but complete. Dr. W. C. Rockliffe (*Ophthal. Rev.*, September, 1882, quoted by Dr. Andrews) records a case of acute conjunctivitis brought on by exposure of the eyes to a 3,000 candle-power electric light. Dr. Emrys-Jones and Dr. David Little have both reported instances showing that workmen or others who expose the naked eye to an arc light of great intensity are liable to have conjunctivitis, as well as more serious ocular disturbances. It is estimated that exposure of the naked eye for one minute to an arc light of 2,000 candles will cause conjunctivitis. The violet or orange lights are said to be less injurious than the normal white light.

The light of lightning is too transient to cause any injury from simple retinal over-irritation; but it is known that cataracts sometimes follow lightning-strokes, and these are believed to be produced by some physico-chemical influence.

Glass-blowers suffer from an opacity of the lens brought not by the light, but the intense radiant heat (148° F.) to which they are exposed during their work. Dr. Andrews found such opacities in 4.5 per cent. of men under thirty-eight years of age, and twenty per cent. in men above that age. Dr. Meyhoefer found nine per cent. among men under forty.

Of all forms of artificial illumination the incandescent electric light, so far as facts now go, is the best. Among 1,100 persons who worked by this light, Dr. Andrews found not a single case of injury. On the other hand many persons testified to the fact that they could work longer by it with less fatigue than with the gas or oil light. This is due, it is found, to the steadiness, absence of heat, and perhaps the greater proportion of violet rays. Short-sighted persons are, in particular, benefited by the use of the incandescent lamp.

EDUCATION AND PATENT MEDICINE.

A CORRESPONDENT asks us how much money is expended annually for patent medicines, and how the expenditure compares with that for educational purposes.

In the year 1881–3 there was expended for educational purposes upward of $76,000,000, or, including the amounts put in sites, buildings, furniture, apparatus, etc., $95,770,712 (*Report of the Commissioners of Education*, 1882, p. xix.). The amount paid for teachers' salaries is $58,272,204. The amount paid for patent medicines annually in this country is about $22,000,000, and between five and eight millions are paid annually to newspapers for advertising them. In England the tax alone on patent medicine amounts to $600,000 annually.

It will be seen that the people of this country pay annually nearly one-third as much for drugs to poison their stomachs as they do for instruction to enlighten their minds.

The *Western Druggist* has given some interesting figures which bear further upon this question: "More patent medicines proportionately are sold in the United States than elsewhere. The great middle class buys most of them.

"The smaller country newspapers subsist largely upon advertisements of these 'remedies,' and at least $100,000,000 have been paid newspapers during the last two decades, while upward of $5,000,000 have been expended in rock and fence advertisements.

"The field for new patent medicines is narrowed every day. Cathartic pills and sarsaparillas do not succeed readily, because so many well-established specimens occupy the field. Until the stamp tax was abolished patent medicines yielded the Government $1,800,000 annually. The census of 1880 shows that there were then 563 establishments in this line in the United States, employing 4,015 operatives; that the capital invested was $10,620-

000, and that the value of the annual output was $14,682,000. New York stood first in the amount of capital invested ($3,512,430). and in annual output (nearly $4,500,000); Pennsylvania second in capital invested, $2,000,000, and third in annual output, $1,000,000; Missouri third in capital, $1,500,000, and fourth in annual output, $750,000; Ohio fourth in capital, $570,000, and fifth in annual output, $450,000; Massachusetts fifth in capital, $521,000, and second in annual output, $1,500,000."

ENTEROPTOSIS—A NEWLY DESCRIBED MORBID CONDITION.

If King Solomon had studied the medical art, he would probably never have contributed to proverbial philosophy an observation so inapt as that in which he dwells upon the general absence of sub-solar novelty. The activity and acumen with which medical investigations are being pushed lead every year to some fresh increment of knowledge and some novel interpretation of facts, quite in defiance of the wise king's aphorism. From Solomon to M. Glenard, of Paris, France, is a considerable step both in time and perhaps in intellectuality; but M. Glenard believes that he has something new, and such persons controvert Solomon and, naturally, in the same connection, challenge contemporaneous attention.

Glenard's thesis is this: *Application de la méthode naturelle à l'analyse de la dyspepsie nerveuse. Détermination d'une espèce De l'Enteroptose. Lyon*, 1885. *Neurasthénie et Enteroptose, Soc. Médicale des Hôpitaux de Paris, Mai*, 1886 (*Revue de Médecine*, January, 1887). The most common form of what is known as neurasthenia is the gastric type, or, as it is sometimes called, nervous dyspepsia. In nervous dyspepsia or gastric neurasthenia there always exists a morbid anatomical condition appreciable on physical research. This condition is given the name of enteroptosis, or prolapse of the intestinal mass.

"Enteroptosis" causes (1) asthenic symptoms, such as assitude, malaise, weakness over the stomach and loins; (2) epigastric symptoms, such as feelings of weight, hollowness, squeezing, boulimia; (3) gastric symptoms of tympanites, and oppression, pain, burning, cramps, and vomiting; finally (4) general neurasthenic symptoms referable to the head and spinal cord, such as mental irritability, hypochondriasis, etc. In other words, the condition of enteroptosis produces the phenomena generally recognized as those of gastric neurasthenia.

M. Glenard bases his views upon the analysis of 200 cases, in all of which he lays the trouble to the prolapse of the abdominal viscera: 1st, Because he finds objective signs of such ptosis in these states; 2d, because the symptoms accord with what might be expected from it; and 3d, because relief of the prolapse relieves the symptoms.

The objective signs do not appear to us to be very well described; but it is stated by Glenard that in cases of confirmed neurasthenia a methodic exploration of the mesogastrium brings out four important signs: 1st, Flaccidity of the abdominal walls, loss of tension of the muscles, or "*abdominal hypostasis;*" 2d, prolapse or falling downward of the intestinal mass, *enteroptosis*. As confirmatory signs there are found in one-third of the cases evidence of prolapse of some of the viscera, such as floating kidney, mobile liver, mobile spleen, narrowing of the colon from twisting with strain upon the ligaments; finally, gastric atony, dilatation, and prolapse.

The falling of the intestines and other abdominal viscera puts a strain upon the ligaments suspending them, and also, in the case of the stomach and intestine, changes their calibre, and produces constrictions and dilatations at different points. The result is the whole train of chronic symptoms recognized as nervous dyspepsia, neurasthenia, and hypochondriasis.

Although a more or less general prolapse may exist, we are told that the fundamental and constant lesion in enteroptosis is a prolapse of the first arch of the colon, *i.e.*, of the angle at the junction of the ascending and transverse colon. This causes a prolapse and atony of the stomach, which, in turn, tends to weaken further the proper support to the colon, and so the process goes on. But the essence of Glenard's view seems to be that a prolapse of the colon is the cause of a large number of neurasthenic symptoms.

The 200 cases cited show at once that Glenard has been studying a peculiar class of nervous troubles. Among the 200 there were 123 in which the symptoms developed after accouchement, as the result of the flaccidity of the abdominal walls, 19 were of traumatic origin, 4 post-inflammatory, and 54 post-dyspeptic. Among the 200 cases there were 157 women and 43 men.

Mobile kidneys were found in the extraordinary proportion of thirty per cent.

The indications for treatment are: 1st, To combat the enteroptosis and abdominal tension by hypogastric support; 2d, to combat the enterostenosis by laxatives; and 3d, to give tone to the abdominal viscera by all possible medicinal, mechanical, and hygienic measures.

One of the best empirical treatments is that by rest, feeding, and massage.

A YEAR OF CREMATION.

The annual report of the New York Cremation Society is of interest to everyone, though this method of disposing of the dead is by no means an accepted custom. The secretary's figures show that the Society has one hundred and thirty-two active members, and a total membership of one hundred and ninety. But two have renounced their allegiance, while two have died. The latter showed their fidelity not only unto but even after death, as their bodies were incinerated at Fresh Pond. The year's receipts were over four hundred dollars, and the Society has now over twelve hundred dollars to its credit.

The report of the president expressed satisfaction at the work of the year. It says, in part: "During the year just ended we have more than held our own as to numbers and resources. Aside from this, it has been a year of inactivity. Call it a year of waiting—of waiting on events and developments at the Fresh Pond Crematory." We learn that eighty-four incinerations have been performed during the past year, and the crematory has earned over two thousand dollars. Nevertheless, the Society finds itself financially embarrassed and asks from its members and friends, "a moderate contribution in the shape

of a temporary loan," so as to have a reserve fund for emergencies. The crematory itself is regarded as "not elegant, but sufficient for all practical purposes," certainly a practical remark.

A common-sense spirit pervades the entire report. The managers of the Society have not adopted the rôle of fanatics. They have plaçed before the public their sincere convictions, and have allowed the question to stand on its own merits. Hence, they may naturally claim that the progress made is permanent. Their modes of procedure might well be followed by would-be reformers in general. In regard to their hopes for the future, the report says: "Cremation has gone quietly into operation without opposition or hindrance from any source and without serious difficulty as to practical details. That an entire change in the customs of a people in the important and solemn matter of disposing of the dead should have been allowed in this way is certainly creditable to modern toleration. Considering that as yet it is but a feeble minority that prefer to give their bodies to the elements of fire to purify and consume, instead of giving them to foul the other three elements, we must admit that it is very generous of the majority to let us have our own way, which we trust will soon be the way of all."

MEDICAL LEGISLATION IN OHIO.

THE State of Ohio has been mediæval in its legislation regarding all matters of State medicine. It was a long time in getting a State Board of Health, and all efforts to secure a respectably good medical law are antagonized with equal persistency and ignorance. There is now a medical bill before the legislature which provides for registering physicians and regulating the practice of medicine. We cannot say whether the bill is a perfect one or not, but the main principle is correct, and the arguments urged against it by the daily press of the State show a most extraordinary degree of ignorance of the subject of medical legislation as well as of the general state of medical practice. The State regulation of this practice, so as to secure citizens against the swindlers and the ignorant, is a perfectly well-tried and approved feature of social polity. And laws tending to further this deserve the support of wise legislators. We trust that Ohio will get a suitable law, and that the drivellings of such editorial writers as have been commenting on the matter in the *Toledo Blade* will have no effect. The answer to all such persons is the practically good results of sound medical laws already attained in Illinois and many other States.

THE LAWS OF INFECTION.

AMONG the more positive results relating to the study of pathogenic micro-organisms achieved during the past year have been those of Watson Cheyne and of Wyssokowitsch. They bear upon the laws regulating infection, and demonstrate almost absolutely the fact that there is really in some diseases a battle between the tissue-cells and the bacteria. Mr. Cheyne, in a research intended to discover the dosage and virulence of infective germs, found that the initial dose of virus was of great importance, and in several instances exercised a marked influence on the course and virulence of the disease. In a summary in the *British Medical Journal* it is stated that various laws were made out—for example, the pathogenic dose of a virus varies inversely with the predisposition of the animal to the disease in question; in animals not very susceptible to a disease the severity of the affection varies directly within certain limits with the amount of the virus introduced, etc. It was found that in some cases a small dose of a virus produced only a local effect, while a larger dose killed the animal, and the small dose might protect the animal from the fatal effect of a subsequent large dose. Although it is as yet impossible to measure predisposition, and thus to decide the dose for any individual, nevertheless the knowledge of the relation between these two factors is of the utmost importance, as throwing light on the mode of spread of epidemics; while the fact that a considerable quantity of the virus is in many cases necessary for the production of a disease explains many anomalies, and affords indications for preventive measures.

The results of the more recent work in injecting micro-organisms into the blood are given in the *British Medical Journal*. In 1874, Traube and Gscheidlen found that, if a quantitty of putrid fluid were injected into the blood of rabbits and dogs, and the blood taken twenty-four hours later, with aseptic precautions, no organisms developed in it, showing that the bacteria introduced had disappeared from the blood, or had been destroyed in it in that short time. Some years later, Watson Cheyne found also that saprophytic bacteria, when injected into the blood-stream of rabbits, disappeared from the blood in twenty-four or forty-eight hours, and he concluded that they had been destroyed in it. Pursuing the subject further, he found that, if larger quantities were introduced, along with the fluid in which they grew, they were able to survive for a longer time, and that the same was the case with smaller quantities, if the animals experimented on had been previously weakened in health by the administration of repeated doses of phosphorus or other poisons. He explained this fact on the supposition that the products introduced with the larger quantities of putrefying fluid, or the poisons previously administered, had so weakened the vitality of the blood and tissues that they were no longer able to destroy the bacteria. Wyssokowitsch has repeated the experiments, and has come in the main to the same conclusions as Watson Cheyne, but he has added several interesting observations. In the previous researches mixtures of bacteria, probably not containing spores, were employed; but Wyssokowitsch used pure cultivations of known organisms, and found that, while sporeless bacteria were rapidly destroyed, the spores could retain their vitality in the body for a long time, and remained in the tissues in a dormant state. In both cases the blood very rapidly became freed from organisms, but the spores were deposited chiefly in the liver, spleen, and medulla of bone, and were apparently taken up by the endothelial cells of the capillaries, in which they were found imbedded many days after their introduction. In one case a few spores of bacillus subtilis were found alive in the liver seventy-eight days after their injection, although none were present in the other tissues or organs. Wyssokowitsch's results with pathogenic organisms are very interesting. When only a few anthrax bacilli were injected, they dis-

appeared from the blood almost completely for some hours, but after twenty-four hours they began to appear again, and increased in number till the death of the animal. When they were introduced in large numbers, this disappearance from the blood was not very marked. Apparently all bacteria tend to be deposited in the organs before mentioned, and in the case of non-pathogenic organisms are there rapidly destroyed unless spores are present. In the case of pathogenic bacteria, this deposit and destruction of the organisms is incomplete, and they very soon gain the upper hand, and again spread into and multiply in the blood. We have thus in the structure of the vascular walls, and especially in the endothelial cells of the capillaries, a protective arrangement against any bacteria which may find their way into the blood. These organisms are deposited and retained in or between the endothelial cells of the capillaries, especially in the organs in which the circulation of the blood is slowest. Then begins a battle between the cells and the bacteria, which results either in the destruction of the bacteria or of the cells, which in the latter case provide a pabulum for the further development of the organisms. Those bacteria which, as a rule, gain the victory must be looked on as a specific bacteria, pathogenic for the class of animal experimented on.

IS CONSUMPTION ON THE DECREASE?

From a practical and statistical study of pulmonary consumption, chiefly as occurring in the city of Philadelphia, Dr. Thomas J. Mays[1] has been led to take a rather more hopeful view of the disease than can be attributed to the majority of medical men. The author finds that in Philadelphia alone, during the last ten years, 26,180 persons have died of pulmonary consumption, and then observes that the "deaths of its many victims scarcely excite more than a passing ripple of alarm in the public mind." In New York, it is our opinion that "the public mind" is so thoroughly inured to the large mortality from phthisis, as to quite take it for granted, without even being moved by passing ripples of alarm, such as obtain in Philadelphia.

Now, it is only too true that the mortality statistics of phthisis speak with sorrowful eloquence of a frightful waste of human life. And it is likewise already apparent that the new bacterial doctrines concerning the etiology of this disease have helped us very little, if at all, in our efforts to check this enormous mortality.

In spite of all this, Dr. Mays believes that phthisis is decreasing, and he is hopeful of a still better time to come. He alludes to the often-cited allegations of professional explorers and discoverers, that the savage does not die of consumption. The disease is "principally engendered by some of the influences which have transformed man from a savage into a civilized being." But Dr. Mays does not advise a return to primitive life, believing that attention to well-known hygienic laws regarding shelter, occupation, food, clothing, and the like, will suffice to mitigate the ravages of consumption.

Besides this, he urges the erection of hospitals exclusively devoted to the treatment of "chest diseases," which may be presumed to mean chronic affections of the lungs. He also accuses the profession of apathy concerning consumption and consumptives, claiming that this is "largely due to a lack of hospital facilities, where these cases can be studied as systematically and as advantageously as other diseases are." There is doubtless much truth in this statement, but as regards the evidence adduced by him in favor of the view that phthisis is already on the decrease, it rests on the slender basis of statistics gathered from a few American cities. According to him, the figures show "that, on the whole, there is a gradual decrease in the number of deaths from pulmonary consumption." We must take issue with Dr. Mays on this point, believing that he has not presented nearly enough statistical evidence to justify any such wide generalization. On the contrary, the very influences which he has mentioned as active in the production of phthisis, are surely more potent for evil in our day than they ever were, or could have been, before. For they belong to modern industrialism, to material progress, to the harsh strife of competition; in a word, they are apparently inseparable from the growth and spread of what we call "civilized life."

An examination of the statistics of all countries will show that, if the mortality from consumption is not increasing, it is certainly not on the wane. Nevertheless, we are inclined to agree with the author when he says that, "notwithstanding the fact that pulmonary consumption causes nearly one-fifth of the whole number of deaths in this country, the picture is not grave enough to warrant us in drawing pessimistic conclusions concerning its final influence on the human race."

The diffusion among the masses of hygienic knowledge will tend to eventually lessen the mortality from this, as well as from other of the more preventable diseases. But between this confidence in the future and the actual decrease of phthisis at present, as alleged by Dr. Mays, there is still a wide gulf, to be bridged over by education and prophylaxis.

A SPECIMEN OF HAHNEMANNIAN HOMŒOPATHY.

We have read with great profit the last issue of *The Hahnemannian Monthly*, a journal devoted presumably to the propagation of homœopathy and the homœopathic practice. The six original articles with which the issue opens are striking illustrations of how little homœopathy there may be in the practice aforesaid. The first treats of fatty heart, and the treatment advised is mainly hygienic—"symptoms as they arise should be treated with the properly selected homœopathic remedy," but it is admttted that the prognosis is bad, *i.e.*, the remedies are futile. The next article is devoted to showing the value of boroglyceride in certain surgical affections. The third article is on climate and phthisis, the fourth describes how the writer gave a three-drachm vial of atropin, ten drachms, to a patient with singultus, until the throat was dry and the pupils dilated. He next gave one-fifth of a grain of pilocarpin, then lachesis, then nux vomica, then ignatia, then hyoscyamus, and then gelseminum in one minim doses. At the end of three months the patient was well, despite the polytherapy. The last communication is upon belladonna, agaricus,

[1] A Study of Pulmonary Consumption in the City of Philadelphia. Read before the College of Physicians of Philadelphia.

and borax, and reads a good deal like the real jargon of dogmatic therapeutics.

The perusal of the articles above referred to leads one to ask how much of the real Hahnemannism there is nowadays among the readers of our valuable contemporary. There is certainly more climate, pilocarpin, and strong nervines and narcotics than anything else in the last issue.

News of the Week.

CONGRESS IS ASKED to give $45,000 for the International Medical Congress, and it ought to do it.

CHOLERA HAS BEEN PREVAILING IN CALCUTTA to an alarming extent. The mortality for the month of December last was not far from four hundred cases.

AN ATTEMPT is being made to abolish the Kansas State Board of Health.

AN IMPORTANT MEDICO-LEGAL DECISION.—In the Superior Civil Court at Boston, recently, a mother and her four children individually sued the landlord to recover damages for sickness contracted because of the poor sanitary condition of the house, and in the care of the family during their sickness from diphtheria. Damages in each case were awarded, the mother receiving $1,600, and the children, $700, $300, $250, and $200, respectively. This is a unique case, and is valuable as a precedent.

A GREAT MEDICAL CONGRESS of the physicians of Russia was held in Moscow, beginning January 4th. Over a thousand medical men were present.

THE MEDICAL SOCIETY OF KINGS COUNTY is to have a building of its own. At a meeting on February 15th the Society adopted the report of a committee recommending the purchase of land and buildings at No. 336 Bridge Street, Brooklyn. Dr. Thallon, Dr. Matheson, Dr. Jewett, Dr. Hunt, and Dr. Hutchins were appointed trustees to make this purchase, and were empowered to receive subscriptions, not to exceed $15,000. It is intended to build a large meeting hall and transfer to it the Society's library. There will also be accommodations provided for the Superintendent of Nurses.

TRANSPLANTING THE EYE OF A RABBIT.—An attempt recently made in this city, by Dr. C. H. May, to transplant the eye of a rabbit to the orbit of a man has proved unsuccessful. Unless some radical improvement in technique can be devised, the operation will never probably become a practicable one.

THE INTERNATIONAL MEDICAL CONGRESS.—Dr. Mariano Semmola, Professor of Experimental Therapeutics in the University of Naples, has consented to deliver one of the "General Addresses" before the International Medical Congress at Washington. He has chosen for his subject "Bacteriology and its Clinical Therapeutics."

DR. J. F. M. GEDDINGS, of Charleston, S. C., died recently in the fifty-eighth year of his age.

A MEDICAL PEER.—Professor Billroth, of Vienna, has been elevated to the peerage, and *à propos* the English medical journals lament the fact tha England alone refuses to make peers out of doctors

A QUESTION OF PREJUDICE.—The *Southern Clinic* says: "In looking over the proceedings of the State Examining Board for the past two years we find that, out of 29 applicants from the University of Virginia and 19 from the Medical College of Virginia, in these two years, not a single applicant from these two Virginia schools has failed to pass the required examinations! While, on the other hand, out of 24 applicants from the College of Physicians and Surgeons of Baltimore, 8, or one-third, failed; out of 16 from the University of Maryland, 5, or five-sixteenths failed; out of 7 from Jefferson Medical College of Philadelphia, 3, or three-sevenths, failed; and of the 3 from Howard University of Washington (colored physicians), all were rejected. Of course, this may be all right, but it would be hard to convince those who know anything of the relative merits of the above schools that the inferior graduates always come from schools located outside of Virginia, and that the graduates of the Medical College of Virginia are better educated men than those coming from first-class schools farther north."

OVERCROWDED.—The number of physicians who have located in Memphis during the past two years is out of all proportion to the increase in population. A few have remained with us, others could not stand the strain, and have sought other fields, while still others are coming in. —*Mississippi Valley Medical Monthly.*

A BILL TO REGULATE THE PRACTICE OF MEDICINE IN RHODE ISLAND is before the Legislature.

THE MEDICAL POLITICS OF BALTIMORE AND THE INTERNATIONAL CONGRESS.—The Baltimore correspondent of the *Cleveland Medical Gazette* writes to that journal: "The meeting of the International Congress, which occurs next fall at Washington, D. C., is discussed somewhat, but there is not much excitement or even interest concerning it. The profession here is pretty well divided into two factions: 'The Maryland University' faction, made up of those directly and indirectly connected with the school and their friends, and 'The College of Physicians and Surgeons' faction, made up in the same way. When the first committee apportioned the positions in the sections, etc., of the Congress, 21 were given to Baltimore. Three of these were given to one man, thus making 19 men selected. Of these 19, 3 were from the Johns Hopkins University, 9 from the faculty of the Maryland University, and the other 5 among the friends of the University. Not one of the 9 was in any way connected with the College of Physicians and Surgeons, nor friendly to it. This, of course, was so plainly an intentional insult to the College faction that they resented it and joined the opposition party, which was so successful at New Orleans, in 1885, in destroying the work of the first committee. . . The new committee allowed Baltimore but 7 positions, instead of 21, which were given to 6 men. Four of these are of the College faction, 2 are not."

THE SOUTHWESTERN MEDICAL GAZETTE is the title of a new monthly journal published at Louisville, Ky., and edited by Drs. M. F. Coomes and J. B. Marvin. The first number is excellently made up, and contains a large amount of interesting matter.

Reports of Societies.

NEW YORK ACADEMY OF MEDICINE.

SECTION IN PRACTICE.

Stated Meeting, January 18, 1887.

ALFRED L. LOOMIS, M.D., LL.D., CHAIRMAN.

DR. E. DARWIN HUDSON, JR., was elected Chairman, and Dr. R. C. M. Page Secretary, for the ensuing year.

DR. J. WEST ROOSEVELT then read a paper (see page 210) entitled

A SHORT ACCOUNT OF OUR PRESENT KNOWLEDGE OF BERIBERI, WITH OBSERVATIONS ON CASES RECENTLY IN BELLEVUE HOSPITAL.

DR. E. C. SEGUIN reported three cases which he had seen in private practice. He had also had opportunity to see one of Dr. Roosevelt's cases in Bellevue, when he made an electrical examination; but it was too early in the period of paralysis to obtain any indication of the reaction of degeneration, and the quantitative reduction might be explained by an objector on the basis of being produced by the œdema. In one of his private cases there were areas of œdema. He thought that there was a strong resemblance in his three cases to alcohol multiple neuritis, and therefore that the term multiple neuritis as applied to beriberi was not inappropriate.

DR. VINEBERG, while a resident in the Sandwich Islands, in 1881, met with the strange affection, and studied it as closely as he was able to do without the aid of books, microscope, and other apparatus.

The more prominent features of the endemic, which he witnessed on three sugar plantations, were weakness and vague pains in the legs, without atrophy or loss of tactile sensibility, but very painful when grasped firmly. The muscles felt normal. The functions of the economy seemed to be normal. On one plantation several Chinamen suddenly dropped down in the field saying that they had lost power in the legs. Within a week fifteen of the sixty Chinese coolies on the plantation were stricken down with the malady. The patients walked with their legs wide apart, and not unlike a tabetic when paralysis is beginning to show itself. The reflexes were normal. Pain, at first, was referred to the region of the knees, and afterward vaguely to the thighs and legs, but not infrequently to the calves alone. Pricking sensations were felt in the legs. No evidence could be obtained that the spine was affected. There was no paralysis of the sphincters, and control over the rectum and bladder was lost in only a few fatal cases a few days before death. The appetite was good, tongue clear or slightly furred, bowels usually costive, the pulse frequent, the urine of normal color and free from sediment, and contained neither albumen nor sugar. Heart, lungs, and liver normal on physical examination. Judging from touch (thermometers being broken) there was no elevation of bodily temperature, except in a few fatal cases just before death. There were no cerebral symptoms, except muttering delirium in some of the fatal cases a short time before death, and in one in which there was "paranoia."

The sudden onset was not invariable. In many cases prodromal pains in the legs and gastric disturbances were present. In several cases the paralysis of the lower extremities was complete at the beginning, and many of these were the first to recover. Œdema of the legs was present in not more than five per cent. of the cases; in none did it become general. In all the cases attended by œdema there was valvular disease of the heart that seemed to have had an existence prior to the paralysis.

Hemorrhages, swollen gums, or other symptoms of scurvy were not observed in a single case.

Of the three hundred and fifty Chinese coolies employed on the three plantations fully one hundred were attacked. Fully fifty per cent. recovered; about thirty per cent. proved fatal, and the remainder passed into a chronic state. Recovery took place most frequently in from three to four weeks, and was liable to be interrupted by relapses of three to four days' duration. In the fatal cases death occurred in from three to four weeks after the onset, and seemed to be due to a rather rapid extension of the paralysis, which finally involved the muscles of respiration, the patient dying asphyxiated. In the chronic cases, beyond a weakness in the lower extremities, the patients exhibited no evidences of ill-health.

In his opinion the endemic was due to the effect of improper food upon a constitution deteriorated by overcrowding, masturbation, and other perverted sexual habits. Opium-smoking did not play any important rôle, because only a few dare-devils ran the risk of the severe penalty imposed by the laws of the islands. The overcrowding has reference to sleeping apartments, where the Chinamen slept upon two rows of shelves. The improper food consisted principally of pea-nut oil, tainted fish, sausage, and pork in an advanced stage of decomposition. Dr. Vineberg excludes contagion and malarial poison as etiological factors.

The treatment that seemed most efficacious consisted of rest, good, nourishing food, into which fresh vegetables entered, and more commodious and comfortable sleeping apartments.

At the Honolulu Hospital, where, in addition to the above, galvanism and faradism were used, a larger percentage of cases of recovery occurred.

There were several Chinese physicians in the district, but their abominable mixtures and free acupunctures of the sites of pain did not seem to be of any more service than Dr. Vineberg's plan of treatment based upon general principles.

DR. C. L. DANA had had an opportunity to see the cases described by Dr. Roosevelt, and did not find any history of paralysis or multiple neuritis until the very latest stages of the trouble; so to speak of the disease as an endemic multiple neuritis was not applicable to the cases seen in Bellevue. To him the cases looked more like those of paralysis following infective diseases. He made an examination subsequent to that made by Dr. Seguin, and then found the typical reaction of degeneration. It had been stated that the typical reaction of degeneration did not occur in multiple neuritis, although it is sometimes present. We also obtained other reactions not belonging to multiple neuritis. Some of the French writers were positive that only the wet form was true beriberi, while the dry variety was due to some other cause. Four different observers had discovered microorganisms, and it seemed to him that there was considerable probablity that the disease was due to some such specific cause.

DR. TAYLOR, of Japan, on invitation, participated in the discussion and spoke of the disease as he had seen it in that country. In the first place, it was restricted to localities, and its occurrence in these regions only was well marked. Thus a change of locality became of prime importance to the patient suffering from beriberi, and if not more than five or six miles, was of very much benefit. Upon an island at the mouth of a certain river beriberi had never been seen primarily, hence many were sent to that locality when they recovered. In the mountains, also ten or fifteen miles away, many might recover. But, according to his experience, if the force of the circulation was very much reduced, patients should not be moved; for the exertion incident to it was liable to be followed by paralysis of the circulatory apparatus, which might terminate fatally within half an hour.

With regard to diet, it had been his observation that with an increase of wheat and decrease of rice there was a decrease of beriberi. On this plan the occurrence of beriberi in the British navy had been very much diminished.

Concerning anæmia, his clinical experience had led him to believe that it was not a prominent symptom. In one hundred and thirty tabulated cases in which he had counted the red blood-globules, he did not find any diminution in their number, and he had come to believe that when anæmia was marked some complication was present.

As to muscular paralysis, he had not tested it with electricity, but had done it by asking the patient to raise himself upon his toes, and he had found that when beriberi was present this could not be done as when in health. Also, when about to sit, the patients would lower themselves to a certain point and then go down in a lump. In almost all cases of beriberi there was more or less of muscular paralysis, and in some cases it was decidedly marked.

Dr. Roosevelt, in closing the discussion, said he regarded it as a misfortune that the disease should be called multiple neuritis, and also that it should be looked upon as an affection due to any one kind of food. The fact should not be overlooked that while it has occurred among those who have subsisted on certain types of food, nevertheless it attacks people who have been living on all kinds of food, and have been surrounded by all that tends to make people physically comfortable.

He regarded it as particularly unfortunate to compare the disease with ordinary alcohol neuritis.

With regard to the presence of a micro-organism, although a number of observers claimed to have found one, it must not be forgotten that it was of the utmost importance, before accepting any report in this direction, to know who the man was, what his work was, what his method of investigation and technique were, and to those must be added the results of inoculation. Until all that had been done, the theory that the disease was due to a micro-organism was a subject of great doubt.

The Section then adjourned.

NORTHWESTERN MEDICAL AND SURGICAL SOCIETY OF THE CITY OF NEW YORK.

Stated Meeting, January 19, 1887.

A. R. Robinson, M.D., President, in the Chair.

Dr. R. C. M. Page introduced the topic of discussion for the evening, viz.:

THE ADMINISTRATION OF QUININE IN THE TREATMENT OF BRONCHO-PNEUMONIA IN CHILDREN.

Referring to his own experience he stated: "I have come to the conclusion not to use quinine with children, for the reason that it is difficult to get them to retain it in their stomachs. In the first place, you have to fight with them to get them to take it. I have never discovered a vehicle in which quinine could be so disguised that children would not know it, and when they take it they are almost sure to vomit it. I remember an instance when a child, after taking quinine, went into convulsions. I think that antipyrin, in a little water, controls the fever of pneumonia, or any other disease, better than quinine.

"In a paper read last night at the Academy by Dr. Putnam Jacobi, it was claimed that quinine in moderate doses would increase the diastole of the heart, and thus tend to relieve congestion of the lung by drawing the blood from the lung; that in this way it stimulated the system and was a better drug than a systolic stimulant which increased the systole and drove the blood to the lung. In ten-grain doses it was contended that quinine is a very good drug in pneumonia in children, but that as an antipyretic it was a failure."

Dr. M. Blumenthal said: "I have given quinine to children in certain stages of pneumonia when they needed a stimulant, and though I have found the difficulty to which Dr. Page alluded, that they take it with great difficulty and vomit it, I do not think I have had more trouble in that way than with any other medicine. I usually give it in extract of taraxacum, dissolved so as to be taken with a teaspoon. I have not been in the habit of giving children large doses—small doses, often repeated, are my preference, and I have been pleased with its effects. I never give quinine in the first inflammatory period of the disease. I give it as a nerve tonic. To reduce the fever I produce free perspiration. I have not tried antipyrin in children's diseases. The general effect of quinine is different in children and adults."

Dr. Dessau said: "I have used quinine for pneumonia, but not as an antipyretic. In croupous pneumonia if I gave an antipyretic it would be to reduce the temperature, and if the temperature does not rise above 104° I do not trouble myself about reducing it. If it rises above that point I administer it to a child of two years of age, say from three to five grains repeated every hour for four doses. I have not yet given it to a child under two years. I have given it to older children in larger doses; to a child of nine years, ten grains, with the effect of reducing the temperature very markedly. I have used quinine in broncho-pneumonia in children to support strength and as a general tonic. In regard to any antipyretic cutting pneumonia short, especially croupous pneumonia, I do not believe it does. I believe that pneumonia is itself a disease, and all we need to do is to treat it on the expectant plan; and, if the fever rises too high, endangering the muscular fibres of the heart, keep the temperature within bounds. Antipyrin is the best antipyretic we have yet had. I have not used cold water as an antipyretic, as the accounts given of it have not been encouraging."

Dr. J. Lewis Smith said: "The paper read by Dr. Putnam Jacobi was in relation to the disease in childhood and infancy, and referred largely to cases under the age of three years.

"In my practice I have found it very difficult to administer quinine to infants or children on account of the vomiting which it is likely to produce. I have given it in various vehicles, and syrup of wild cherry bark seems to me to cover the taste best and prevent vomiting. As to the benefit to be derived from quinine, I think that it is more generally used in bronchial pneumonia, as well as in croupous pneumonia, than any other one agent, and there are physiological reasons which justify its use. The opinion has been expressed by some observers that it does, to some extent, retard cell-migration. If it is administered in a large dose, in the commencement of pneumonia, it may diminish the amount of exudation. I am inclined to think it does; and when I give it to a child with bronchial or with croupous pneumonia I give it in pretty decided doses for two or three days, that is, during the active period of the disease. This I think obtains better results than the administration of it in smaller doses. I believe it has a tendency to diminish the frequency of the pulse. As regards giving up its use for the remedies that have so recently attracted attention, I should not do it. From my experience with antipyrin I hesitate to use it. I think there is something in antipyrin having a depressing effect, and, although it may reduce the temperature, the result in the end seems to me to be not so favorable as the old treatment by the use of quinine and a nutritious diet."

Dr. Smith, on being asked what he considers the effect of quinine on the heart, whether stimulant or depressant, said: "I merely follow authorities on that question. In moderate doses I think it is a tonic and increases the systolic action. In large doses it acts differently upon the heart. There is a difference of opinion about that."

Dr. C. S. Wood said: "In regard to the use of quinine with children, I think special attention should be paid to the time of using it, if it be used at all. I use it formerly much more than I do now. Almost any dose if it does not produce vomiting, appears to me to do them more harm than good, owing to the row they make

about taking it. During the early stages of the disease I do not think that quinine is called for, but antipyretics of various kinds may be used, and what I have mainly used is aconite in small doses. The over-distended heart is relieved by the very process of reducing its action. If that is not sufficient I believe in wrapping a wet cloth around the chest and body of the child, changing it frequently, and perhaps keeping it on for the first two or three days. When the acute symptoms have subsided, if we can administer quinine without a struggle on the part of the child, I admit that it is valuable. I believe, however, that a small dose of strychnine—from $\frac{1}{120}$ to $\frac{1}{60}$ of a grain, according to age, for children under three years—answers equally well, never disagrees with them, and can be given in one or two drops of liquid. I differ, perhaps, from many others with regard to the nature of the disease, and on that account may have biased views as to treatment. In my opinion it is not a specific disease, or one that is dependent upon the existence of a certain microbe. I believe the microbe to be the result of the disease in croupous pneumonia, and not the disease the result of a micro-organism. My success in the treatment of the disease, from that stand-point, has been as good as the average."

Dr. A. M. Jacobus said: "I have given quinine to children, but never in large doses, as they seem to me to have an unfavorable effect. I have given generally from one to two grains four times a day, more as a heart tonic than anything else. I believe it steadies the pulse. Since last summer I have used antipyrin with a high temperature, but not in large doses. From experience with adults I believe it prevents inflammation and that it lessens pain. I use both quinine and antipyrin, a little of each alternately."

Dr. J. H. Fruitnight said: "In the catarrhal pneumonia of infancy I never use quinine as an antipyretic—always as a tonic. In croupous pneumonia in adults or children, before the introduction of antipyrin, I always used quinine as an antipyretic. In broncho-pneumonia of infancy, in the early stages, I withhold quinine. If the temperature be high I use aconite. In catarrhal pneumonia I administer quinine as a tonic. The dose I give is divided to equal ten grains in twenty-four hours. I have given it in various vehicles, but since Dr. Smith suggested to me, some time ago, the use of wild cherry syrup, I find less trouble with that than with any other preparation. Most children retain it, and when there is any difficulty I instruct the nurse to give very small doses, increasing them gradually until the stomach assumes a tolerance of the mixture, and in that way I secure control of the symptoms of nausea and vomiting. As regards the effect of large doses of quinine my opinion is that it is a depressant, and I would never give a large dose to a child—never more than five grains at one dose. As regards the cold-water treatment, I have never resorted to it, but I have recently treated a child with antipyrin with good effect. Antifebrin I have never used."

Dr. S. N. Leo said: "My experience accords generally with that of Dr. Fruitnight. I have had occasion to administer quinine in both catarrhal and croupous pneumonia to very young children, and have been permitted to administer it in the form of rectal suppositories, which, I think, is an excellent plan of medication. I would also suggest that in compounding a prescription of quinine, if you take some powdered licorice and mix it with sulphate or bisulphate, add a little common salt, and beat it well up in the mortar, and afterward add a few drops of any alcoholic mixture, then mix with wild cherry, you obtain a most excellent compound. I think great care should be exercised in administering quinine to children in either form of pneumonia, and especially if they have had rheumatism we ought to be certain that there are no remnants of endocarditis, as then quinine seems to be a dangerous remedy, even in small doses. I recall some years ago a case in which I made an autopsy, where the child died, in my opinion, from an over-stimulation of the heart, due to the administration of quinine."

Dr. Peck asked how old the child was and how large the dose of quinine.

Dr. Leo: "I think the child was between four and five years. The amount of quinine administered was, I think, something like four grains every three hours, and it had been taken for quite a long time."

Dr. E. S. Peck said that he desired to contribute this statement, that the administration of quinia-sulphate in the doses just mentioned had been attended by injury to the retina of the eye, the medical attendant being ignorant of its possible extent, on account of the youth of the patient and the severity of the pneumonia. He once treated with strychnia injections a child aged four, who had taken six doses of quinia of three grains each, and there was no mistake about the retinal amblyopia. Fortunately complete vision was restored. The dangerous effect of large doses of quinia upon the acoustic nerve should be impressed upon every practitioner.

Dr. W. M. McLaury said: "In the treatment of broncho-pneumonia in children I rely very much on antipyrin to reduce the temperature, and in administering it to children I always use it in the form of suppository capsules; from two to ten grains, according to age and condition. I have never found any but good results from its use. I very rarely give quinine in the case of a continued fever, whether from disease of the lungs or general febrile condition. I rely mainly upon spirit of nitre and aconite to control the febrile symptoms. Antipyrin, however, has served me so well that I seldom fail to use it, giving it in doses from two and one-half to twenty grains, according to circumstances. I have given ten grains to children five years of age, and I generally repeat the dose within two hours if an abatement of the febrile symptoms has not taken place."

Dr. Baruch said: "I think that by making a sufferer of croupous pneumonia comfortable, and by giving an ample supply of food, we will accomplish more than by medicines. I have given no medicine in this disease within the last five years. The temperature in croupous pneumonia is, I think, of very little significance. Here we have an over-distended heart. Quinine is not intended and cannot be expected to overcome that. I think that by relieving the pulmonary congestion we can do more toward relieving the heart-weakness than by any other means. Grown persons I would not hesitate to bleed for this so-called heart-failure. For that reason I rarely give quinine. The rectal administration of quinine I regard as absolutely useless. I have always found the rectum not to be depended upon."

After some discussion as to the efficacy of the rectal administration of quinine, the President,

Dr. A. R. Robinson said: "I think, in judging of the value of any remedy in comparison with that of other remedies, we require to study the cause of the disease and the causes of death. Now, the cause of broncho-pneumonia is almost exclusively a bronchitis. It is very rarely that the agent producing the bronchitis produces the pneumonia at the same time. The bronchial secretion causes a falling in of the cell-walls of the vesicles, producing a change in the circulation. If the right side of the heart is weak, you very soon get œdema. The retained secretion, irritating the cells, produces the bronchial pneumonia. In the commencement we get very few nodules, but the trouble is that the number increases very rapidly, and we soon find a large area of consolidation. If you get a fair area affected, you have the danger of death from high temperature; consequently you have to treat for the general nutrition of the child; then the treatment for the fever and the treatment as regards air, if they suffer from respiration. If, therefore, it can be shown that quinine will be a benefit in the bronchitis, that it will build up the child, strengthen the respiratory muscles, tone up the blood-vessels, reduce the temperature

or strengthen the heart, it would be indicated, provided it will do no great harm in other directions. My experience of it has been that it has not been borne by children, and does not reduce the temperature, but, when retained, it probably tones up the walls of the blood-vessels. For that reason I would not use it, because we have better agents. I think the disadvantages are so much greater than the advantages that it is contraindicated in the majority of cases."

Correspondence.

OUR LONDON LETTER.

(From our Special Correspondent.)

THE SURGICAL TREATMENT OF HYDATIDS OF THE LIVER —SANITARY IMPROVEMENTS AT THE HOUSES OF PARLIAMENT—UNQUALIFIED ASSISTANTS—ANOTHER FAITH-HEALER.

LONDON, January 31, 1887.

THE last meeting of the Medical and Chirurgical Society was entirely occupied in discussing the treatment of hydatids of the liver. Mr. Barwell opened the discussion by reading a paper on the subject, in which he proposed a modification of the treatment by incision. He recommended that puncture, with a small trocar, should always be primarily employed, but where this failed he advocated the making of a free opening, to be kept open some time. In the paper read last Tuesday he advocated the employment of "a two-stage method." The abdominal walls were to be first incised, and the cyst or its surroundings stitched to them. After a few days' delay the cyst was then to be opened. Mr. Warrington Haward thought the method dangerous, as fluid might escape when stitches were inserted into the parent cyst. He preferred the use of caustic potash to form a fistula leading down to the cyst, and then free incision of the latter. Mr. Howard Marsh said he had successfully employed Mr. Barwell's method on a large cyst. Mr. Harrison Cripps narrated a case in which he had made an exploratory incision, and, finding a suppurating hydatid, had enucleated it along with its capsule. A large cavity was left in the liver, and into this a second tumor was seen bulging, and was removed. Sir Dyce Duckworth thought he had seen good results from all these surgical methods. Mr. Walsham observed that even tapping had its dangers. Cases of sudden death had occurred in which it had been suggested that a vein might have been punctured and the hydatid fluid introduced into the circulation. He had not himself had any occasion to perform any preliminary operation of stitching the cyst or its surroundings to the abdominal walls. After securing the cyst in a safe place by forceps, he emptied it at once. He then syringed it out with carbolized water, and after filling it with iodoform, inserted a drainage tube. Dr. Angel Money mentioned a case in which, during the operation of puncture, a daughter-cyst entered a vein and lodged in the right auricle, causing sudden death. Mr. Pearce Gould said he supposed no one would attempt such an operation as Mr. Barwell advocated while simpler methods, such as puncture, were available. If a further operation than puncture were required, he advocated free incision, and related two cases in detail. He would, he said, first tap with an aspirateur, then pull out the half-collapsed cyst, stitch it to the abdominal walls, and evacuate the contents. Mr. Henry Morris said that, as to stitching the cyst to the abdominal walls before opening it, he saw no objection to Mr. Barwell's plan, but little in its favor. He considered it important not to interfere with the parent cyst in any way, to take out as many daughter-cysts as possible, and refrain from antiseptic injections. He had seen delirium produced by iodoform. Mr. Barwell, in his reply, also condemned iodoform as dangerous. Potassa fusa treatment he considered tedious and painful. He remarked that the discussion had shown him that other surgeons had used the plan he advised, but he had not previously been aware of this.

It augurs well for future sanitary legislation that our legislators have set their own house in order. The sewerage of the Houses of Parliament has just been rearranged at a cost of about fifty-five thousand dollars. The old drains were of brick, far too roomy, laid so that the fall was insufficient, and sewer air regurgitated into the Houses of Parliament. They have been replaced by iron pipes of moderate dimensions, laid so as to give a greater fall, and freely ventilated throughout. The ground at Westminster lies so low that the outlet of the new system of sewers is several feet below the low-level main sewer. The difficulty thus arising has been got over by employing Shone's pneumatic system. One or more gas-engines are used to compress air, and the compressed air is admitted into a pneumatic ejector and raises the sewage some twelve feet. The apparatus acts automatically so long as the supply of compressed air is kept up, the ejector emptying itself as soon as it is filled to a certain level. The trials which have been made with the apparatus show that it answers the expectations which had been raised of it, and it is now in full working order.

Considerable discussion has taken place lately on the subject of unqualified assistants. Lord Beaconsfield defined critics as "authors who have failed in their profession." Similarly, unqualified assistants are, as a rule, students who have failed to qualify as medical men—either from want of brains, or, in not a few cases, from want of money. There is among them a scanty sprinkling of men who have never been students at all, but have picked up a smattering of physic, either in a doctor's surgery or behind the counter in a druggist's shop. As formerly, the outcry against unqualified assistants has raised up in their defence a host of friends ready to testify to their good qualities. Not a few aver that they are, as a class, immeasurably superior to the average qualified assistant—both in practical knowledge and in acquaintance with the details of practice. That they should be better conversant with the petty routine of practice no one ought to be surprised at. The unqualified assistant remains such to the end of his career in ninety-nine cases out of a hundred, and is usually a "chronic" to begin with. The qualified man who seeks an assistancy is usually raw as to practice, though brimful (in his own estimation) with science. His object in seeking an assistancy is usually to get a little experience of actual practice before embarking in one on his own account. A few qualified men remain, from want of money, for years in the subordinate position of assistants; but the natural ambition of all is to have, sooner or later, their own practice. In England, unqualified assistants are very largely employed, though, perhaps, not to so large an extent as a generation ago. They are cheaper than qualified ones, and being without qualification, there is no danger of their setting up in opposition to their principals. Their being older is also a recommendation with patients. The unqualified assistant is often a beardless youth, full of airs as to his own importance, but frequently considerably nonplussed on being summoned to a simple case for which his college course has not prepared him. To such, measles is, at first, a *bête noir*, and the other disorders of childhood all-bewildering. As to diseases of children, indeed, most newly qualified men, whether assistants or not, soon get befogged. A case came under my notice not very long ago in which a not undistinguished youthful graduate was sent for to see an infant suffering from bronchitic catarrh. He looked at the little sufferer, and remarking that it was too young to take medicine, sagely told the mother she could do nothing but keep it warm. He then departed, leaving his reputation behind him—never to be resuscitated, so far as regards his knowledge of in

fantile disorders, in the eyes of that particular mother. She sent for a neighboring older practitioner, who, although not a graduate, gave satisfaction to the family, and gained several fees for himself.

Another faith-healer has lately made his appearance here. The gentleman in question is Mr. George Milner Stephen, and hails from Australia. He is a cousin of the eminent legal luminary, Sir J. Fitzjames Stephen. Mr. Milner Stephen is good enough to inform the public that he has visited America, and performed many wonderful cures there, as in Australia. Perchance, therefore, some of your readers may know something of his career. His course here is likely to speedily terminate with ignominy. One of the daily papers has sent a special commissioner to interview Mr. Stephen and take some test cases for him to operate on. Strange to say, though, in every one of these cases did the faith-healer discover some obstacle to the successful exercise of his powers. One case was too bad; another was of too long standing. Another had been treated by other doctors in an antipathetic manner, or the patient's attitude of mind was inimical to a cure. Another objection raised was that many applications of the power would be necessary, and as the test-patients did not pay, naturally Mr. Stephen did not desire that they should make repeated visits. The conclusion drawn by the interviewer was that Mr. Stephen was an unmitigated impostor. He will probably soon vanish from London society, and the little stir created by his advent as speedily subside.

THE CHOLERA IN JAPAN.

To the Editor of The Medical Record.

Sir: Japan in, modern times, has suffered more severely from the scourge of Asiatic cholera than any other country within the belt of the temperate zone. Since I came here, in 1859, when the country was first opened to the Western world, there have been two distinct periods of long epidemic prevalence of the disease.

The first, in 1860, was fearful in its death-rate, and continued to destroy thousands during successive summers, till about the year 1867, when it died out.

As there was no systematic record of disease and death-rate at this time, the sum total, or even an approximation to power of the scourge, can be little more than conjectured. My own recollections of the first two years, especially, of this period are very vivid. Hundreds, and it is not too much to say thousands, died without even native medical aid, and in the cities near the sea the water was often their burial-place.

In 1877, while acting as Sanitary Officer of the port and city of Yokohama, I recognized the first cases of the return of the disease here, which had been, as far as could be ascertained in the absence of any quarantine regulations, imported from China. In virtue of my office I was then charged with the preliminaries of applying, for the first time in the history of this country, the principles of modern sanitary science to an arrest or control, as far as possible, of cholera.

Notwithstanding the utmost liberality on the part of the government, and the intelligence and untiring efforts of the native medical men in developing and perfecting sanitary measures according to the best known methods in the Western world, it has not succeeded in forcing the disease from its stronghold upon the country.

In 1879 there were over ninety thousand cases, and the statistical returns of the past year, just issued, mark fearful total of 154,373 cases, and 101,695 deaths.

Detailed and exhaustive reports of this year's sanitary work are now in course of preparation by the Central Sanitary Board, in which the wonderful progress of this people in this important branch of science will be strikingly brought out. I would here say in advance that the most important feature of the sanitary system carried out in this country, quite eclipsing that adopted by the highly civilized Western world, is the cremation of *all* dead from cholera.

Extensive appliances for the purpose are constructed on scientific principles in different parts of the Empire. In the city of Kyoto these appliances are on such a large scale that five hundred cremations can be made in twenty-four hours.

Yours truly,

D. B. Simmons, M.D.

Yokohama, January 8, 1887.

"THE COUNTRY DOCTOR AND HARD THINKING."

To the Editor of The Medical Record.

Sir: I have read with great interest the article in your journal entitled, "The Country Doctor, and Hard Thinking," and fully agree with "Rusticus" in his letter in your issue of January 17, 1887, and would like to relate some of my own experiences. Seven years ago, one dark stormy night, I was called to go eight miles from my office to see a patient, and asked to come quickly. After driving about five miles I found the road impassable. I left my team in an old unused shed by the roadside, covering my horse well with blankets, and travelled the remainder of the way across ponds and fields on foot, arrived at the house all wet and exhausted, administered to the wants of my patient, who was suffering severely (and would have died without assistance), waited until she was resting quietly, and then returned home in the same manner.

One day during a terrible snow-storm, when the drifts were several feet deep, I attempted to go (by way of an old road) to see an acute case of pneumonia (of which we have no small amount in Massachusetts). The result was that my team was completely stuck in the snow. I unhitched my horse, beat a path with hands and feet for him, and led him to the main road, then went back and drew out my sleigh myself. I had just arranged my team when my coadjutor came along and reported that he had worked all day to get five miles from home through the drifts and cross-roads.

I could repeat hundreds of these instances; but there is one point more: After driving sometimes several miles, the country doctor often comes in contact with cases that even a specialist would shrink from, but he has no one at hand for counsel, is without suitable instruments or medicines, and the patient is too poor to send to the city hospital. Well, he must be relieved somehow, and the doctor, fully knowing what is wanted but unable to obtain it, must use all his brain-forces to meet the emergency, *and he will do it too*, and rise out of the trouble triumphant. Now, let one of your very fashionably dressed M.D.'s from the city come here, and I will loan him my office from now until spring time, and if he will attend well to my patients, I am confident he will be converted, begin to realize what a country doctor's life is, and what his medical acquirements must be. We have at the present time nearly three feet of snow on the ground and drifts by the wholesale.

Country Doctor.

THE DISPENSARY ABUSE.

To the Editor of The Medical Record.

Sir: The editorial in your issue of January 22d, on "The Present Condition of the Medical Problem," is a timely statement.

The evils of indiscriminate medical charity are not lessened as they should be, but the profession is more fully aroused to this abuse than formerly.

The reorganization of the Out-door Department at Bellevue is, indirectly, a help to the reform, as the classes are now used to supply the colleges with clinical material, and the advantages of the City as a centre of medical education are increased without adding to the thousands of people who receive gratuitous treatment.

It is not likely that the number of medical schools will be augmented, and the demand for clinical cases will not be greater than it was a few years ago, when rival institutions were striving to find injured and diseased persons suitable for exhibition to their classes as the best advertisement of their future courses of instruction.

Some new dispensaries have been opened, much against the expressed wishes of prominent medical men. This leads us to inquire whether it cannot be made the duty of the State Charities Aid Association, or of our local societies, to prevent the increase of eleemosynary institutions in districts already occupied.

A few of the dispensaries have continued to investigate the cases applying for relief, and as far as I have learned this has proved satisfactory. The physician himself must work to prevent whatever abuse comes under his own eye. If this be done, there will be an abatement of the evil and less necessity for public meetings and discussions.

That this is a subject of great importance is shown by the revival of interest in the provident dispensaries in England. Timothy Holmes, and others equally well-known, have spoken and written in favor of a more systematic application of medical charity.

Respectfully yours,

WALTER LESTER CARR.

36 WEST THIRTY-SECOND STREET,
January 28, 1887.

Army News.

Official List of Changes in the Stations and Duties of Officers serving in the Medical Department, United States Army, from February 6 to February 12, 1887.

FRYER, BLENCOWE E., Major and Surgeon. Ordered to Fort Lowell, Ariz. Terr. S. O. 29, A. G. O., February 4, 1887.

LORING, L. Y., Captain and Assistant Surgeon. Leave of absence still further extended three months on surgeon's certificate of disability. S. O. 29, A. G. O., February 4, 1887.

PHILLIPS, JOHN L., First Lieutenant and Assistant Surgeon. Leave of absence further extended one month. S. O. 29, A. G. O., February 4, 1887.

WOOD, LEONARD, First Lieutenant and Assistant Surgeon. Ordered to proceed to these headquarters, and report to Department Commander for temporary duty. S. O. 12, Department of Arizona, January 31, 1887.

HARRIS, H. S. T., First Lieutenant and Assistant Surgeon. Ordered from Fort Clark, Tex., to Fort Ringgold, Tex. S. O. 16, Department of Texas, January 31, 1887.

Medical Items.

CONTAGIOUS DISEASES—WEEKLY STATEMENT.—Report of cases and deaths from contagious diseases reported to the Sanitary Bureau, Health Department, for the week ending February 12, 1887:

	Cases.	Deaths.
Typhus fever	0	0
Typhoid fever	8	3
Scarlet fever	48	10
Cerebro-spinal meningitis	3	3
Measles	349	47
Diphtheria	129	39
Small-pox	12	2
Yellow fever	0	0

CIMICIFUGA RACEMOSA IN THE TREATMENT OF CHOREA.—Dr. Hiram Corson, of Conshohocken, Pa., in an article on chorea and its treatment by cimicifuga racemosa (*Medical and Surgical Reporter*) says that he has used this drug with invariable success for over fifty years. He was led to give it a trial through its recommendation by Dr. Jesse Young, in a paper published in the *American Journal of the Medical Sciences*, in 1832. He thinks that Dr. Jesse Young was probably the first regular physician who ever used the black snake-root in chorea—at least the first who published an account of its use; for in a note by the editor, appended to the communication, he says: "We are not aware of the remedial powers of the black snake-root having been noticed by any writer on the materia medica, but Dr. Physick informed us, nearly ten years ago, that he had known the plant, given in doses of ten grains every two hours, prove successful in the treatment of chorea in several instances." From the day that Dr. Young's recommendation of cimicifuga met his eye, until the present, Dr. Corson has relied on the snake-root alone, "and in every case it has given speedy relief." In addition to believing it "almost if not quite a specific in chorea," the author also maintain that it is of signal benefit in "nervous persons" who are afflicted with insomnia. Again, Dr. Corson says, we have much talk about "nervous exhaustion," and the value of "strychnine and iron, and a little good whiskey, as tonics to build up the system," and arsenic is the universal favorite in chorea; but he feels assured that all of them combined have not half the value of the infusion or fluid extract of black snake-root, a plant that is accessible to every Pennsylvanian doctor, as it grows on almost every wooded hillside in that State; and yet but few physicians are acquainted with it—cannot point it out, though it towers above nearly all the other plants of the forest. "In every county in the State," he presumes, "it can be found; any mother can prepare and administer it; and were this done early in the cases of chorea, which are found in every township in the land, physicians would not be mortified, and the inefficiency of our profession exhibited before the public by the appearances on our streets of young persons helpless in limbs and contorted in features by this disease of the nervous system."

FLUID EXTRACT OF CORN SILK IN THE TREATMENT OF CYSTITIS.—Dr. Rush M. Brown reports good results from the combined local and internal use of corn silk in catarrhal troubles of the bladder (*The Medical Age*). He injects into that organ half a teacupful of tepid water, to which has been added a teaspoonful of the fluid extract of corn silk. At the same time ten drops of the medicine are to be taken internally three times a day. The results in a number of cases were surprisingly good.

HYSTERICAL ANURIA.—The Paris correspondent of the *New Orleans Medical and Surgical Journal*, January, 1877, writes as follows concerning this condition: "In an important work by Dr. Rossoni, on hysterical anuria accompanied by secretion of urine by the stomach, he says that anuria is not a rare symptom in hysteria. This anuria results from a physiological change of the functions of the human organisn, the nature of which has not been ascertained. With hysterical patients having anuria, the stomach may be the receptacle of a more or less abundant secretion of a liquid presenting all the physical and chemical properties of urine. Urinary secretion of the stomach may cease, and yet not be carried on by the kidneys. Complete anuria may last for two months. Pilocarpine may, in some cases, hasten the resumption of renal functions; with some hysterical patients pilocarpine occasions, in the salivary glands, the secretion of a liquid presenting the same chemical properties as urine. Urea artificially introduced into the circulatory system, in cases of hysterical anuria where there is no secretion of urine by the stomach, occasions uræmic symptoms. On the contrary, urea may, with impunity, be introduced in doses of sixteen grammes in case of hysterical patients, subject to vomiting urine. There is no analogy between hysterical anuria and uræmia in nephritis, or from the absence of the kidneys after nephrotomy, or from ligature of the ureters.

LOCOMOTOR ATAXIA IN CHILDREN.—Several supposed cases of this affection in children have been from time to time reported, but most of them were really cases of the hereditary ataxia of Friedreich, an affection resembling in many particulars *sclérose en plaques*. Remak has, however, reported two cases in the *Berliner Klinische Wochenschrift* of apparently genuine tabes dorsalis. One occurred in a girl twelve years of age, and the other in a boy of fourteen years of age.

DIABETES IN CHILDHOOD.—Dr. Albert F. Fuchs writes that he has had under observation a case of diabetes in a boy four years and eleven months of age. One sample of the urine showed a trifle over seven per cent. of sugar. The total amount of sugar excreted in the twenty-four hours could not be determined, as the child died in coma on the third day after first coming under observation.

A RUSSIAN CENTENARIAN.—On September 6th was celebrated in St. Petersburg the birthday of Count Sergius Ouvaroff, who was born in 1786. As a youth he passed a number of years in Paris as secretary of the Russian legation, and from 1833 to 1851 he was Minister of Public Instruction in St. Petersburg, and was mainly instrumental in introducing the classical method of instruction in Russia. He published a number of works in Russian, German, and French.

DIAGNOSIS AND TREATMENT OF TUMORS OF THE BLADDER.—Dr. Guyon made some remarks at the French Surgical Congress upon tumors of the bladder, claiming that exploratory incisions are not requisite for diagnostic purposes, but that the symptoms presented, together with a clinical and anatomical examination, were sufficient in the majority of cases (*Journal of Cutaneous and Genito-Urinary Diseases*, February, 1887). He compared the hæmaturia symptomatic of vesical neoplasm with that of kidney tumor, in which latter the signs of renal ballottement and symptomatic varicocele aid us. He then dwelt upon the exploration of the bladder per rectum, per vaginam, and by catheterization, and said that little information could be obtained from the latter mode of examination. A tumor of the bladder being discovered, it should be operated upon as soon as possible, unless all the walls of the organ are infiltrated with the disease. Malignant as well as benign tumors should be operated on, the fact being remembered that the malignant are almost always followed by a return of the disease, and that the benign usually get well. Benign tumors can occupy the bladder for a long time without causing the patient more annoyance than that caused by hæmaturia, etc. One should not hesitate to operate when in the presence of a complication such as cystitis, retention of urine, etc. The extirpation of the tumor, he believes, cannot be properly done except by the hypogastric incision.

BED-SMOTHERING.—A most pernicious habit, which is very prevalent among children, is that of sleeping with the head under the bed-covers. Sometimes children acquire this habit when young, on account of their "fear of the dark." Unwise parents often do their children a vast deal of harm by using the imaginary man in the dark as a means of frightening the little ones into obedience. Such children, when put to bed, nestle down under the covers as soon as the light is put out, and thus breathe over and over, during sleep, air which is contaminated by exhalations from both the skin and the lungs. Another cause for this injurious mode of sleeping is cold sleeping-rooms. The custom of sleeping in rooms in which there has been no fire for weeks or months, is a most pernicious one for many reasons, and this may fairly be included among the number of grave objections to the old-time custom. The temperature of such a room is often some degrees below freezing. Children, and even older people, sleeping in a cold bedroom, are often compelled to cover the head with the bed-covers to protect the nose and ears from freezing. Children who sleep in this way awake in the morning pale and languid, and present all the evidences of systemic poisoning. Such children do not develop properly. When they sleep with older persons, as is often the case, the evil is greatly increased by the greater degree of impurity of the air beneath the bed-clothing. Infants are not infrequently smothered to death by this means. Several cases of this sort have come under the personal observation of the writer. The habit of sleeping with the head thus covered is sometimes continued to adult life, and a vast deal of constitutional injury is thus done.—*The Pacific Record.*

A CURE FOR NEURALGIA, which is highly praised, is given by Dr. H. G. Davis in the *Boston Medical and Surgical Journal*. It consists in administering the following:

℞. Tinct. cichon. co..... ℥ ij.
Tinct. nuc. vomic..... ℥ ss.
Morphiæ sulph..... gr. ij.
M. Sig: 3j. q. 3 h.

This amounts, as will be seen, to giving a tenth of a grain of morphine every three hours. Naturally it will relieve the pain, but it is hardly a safe remedy.

OPIUM-SMOKING.—In an article in the *Indian Medical Gazette* Surgeon-General Moore defends the practice of opium-smoking, and maintains that it is not only not harmful, when indulged in moderately, but that it is even beneficial. The use of opium, he says, may be continued for years without the necessity of increasing the dose, and a moderate opium-smoker is no more likely to become an "opium fiend" than is the temperate user of alcohol to become a drunkard, and even among the confirmed abusers of the drug there are seen none of the distressing effects of alcoholic intoxication. The writer says that the members of the Anti-Opium Society, in their misplaced zeal, would take away from the poor an inexpensive source of enjoyment, a protection from disease, and an alleviation of their sufferings. But perhaps his strongest argument, and a very characteristic one, is that the Anti-Opium Society, if it succeeded in its objects, would diminish the revenue of India by seven or eight million pounds sterling.

SUCCESSFUL REMOVAL OF ENTIRE SCAPULA FOR OSTEO-SARCOMA.—At a recent meeting of the London Clinical Society, Mr. Charters Symonds reported a case of removal of entire scapula for osteo-sarcoma, two years having elapsed since the operation without any recurrence of the disease. (*Medical Press.*) Six months before admission the patient fell and bruised his shoulder, attending for a month the Croydon Hospital, where he was told he had ruptured a muscle. One month after the accident a swelling appeared, and from that time steadily advanced without pain. The inconvenience was due entirely to its size, the man being unable to do heavy work. When admitted he was healthy in other respects. To the dorsum of scapula was attached a tumor measuring nine to ten inches, and projecting five inches from the surface. It moved with the scapula, and did not appear quite to reach the glenoid cavity. The spine of the scapula could just be traced. On April 1, 1884, the whole bone was removed except the acromion and coracoid processes. The usual transverse and vertical incisions were made, one flap only being reflected at a time. First the minor flap was dissected off and the posterior border of the bone freed. Next the inferior angle was isolated, and then the anterior flap was reflected and the axillary border freed, the various muscles being divided. The deltoid and trapezius muscles were divided close to the spine of the scapula, and the superior border was freed. The growth was found to extend to the glenoid cavity, so after sawing off the acromion and coracoid processes, the capsule and the muscles covering it were severed. The whole mass was then raised from the

chest, and the serratus magnus divided. The subclavian was compressed during the operation, and all the large vessels seized by two pairs of forceps before being divided. In this way little blood was lost. The same evening the man had an unexplained attack of dyspnœa, which lasted twenty-four hours, and interfered with sleep. The temperature rose quickly, reaching its highest point, 103.6, on the fourth day, but instead of falling it passed into a hectic fever, which lasted until May 9th, and then suddenly ceased on the removal of the cause of suppuration, viz., the head of the humerus. Rapid recovery ensued. Another clinical feature of interest was œdema of the arm, without redness and with no special fever. This was attributed to thrombosis of the axillary vein, but as it disappeared within a few days of the removal of the head of the bone, some other explanation seemed called for. Mr. Symonds called attention to the fact that the continued suppuration seemed due entirely to the cartilage covering the head of the humerus. This structure was found in a suppurating state, and was being thrown off by granulating tissue, and the moment the entire surface was removed recovery began, and was so rapid that within a few days he was up and the parts nicely healed, the man gaining flesh within three weeks. The complication was attributed previously to traumatic fever, which determined suppuration in the wound, and that this, involving the joint structures, the cartilage acting like a foreign body maintained the suppuration. On these grounds Mr. Symonds said he now always carefully removed all cartilage in operations involving joints, for that while in many cases immediate union does occur, when the cartilage is left, an occasional result such as the present will happen. The man was shown to the society two and a half years after the operation, and had a useful arm. He could do much of the lighter work of his trade of a carpenter, being able to drive nails and screws and use a plane. He was able to earn a good living. The rhomboid muscle acted well, having obtained a partial attachment, so that the man could throw both shoulders back. He could rotate the shoulder and carry it backward and forward, but was unable to raise it from the side. The tumor was a hard osteo-sarcoma, having a basis composed largely of fibrous tissue.

A Remedy against Epilepsy.—

℞. Extr. fab. Calabar ..... gr. vijss.
Spir. æth..... f 3 jss.
Aq. amygd. amar. (sive aq. menthæ pip.)..... f 3 vss. M.

Sig.: Five to eight drops t. d. for children; eight to fifteen drops t. d. for adults.—*Pharm. Zeitschr. f. Russland*, June 1, 1886.

The Treatment of Puerperal Sepsis.—Runge, of Dorpat, states that his late experience in the treatment of puerperal sepsis has taught him a manner of dealing with the affection that yields far better results than other methods. A strict *local* therapeusis is carried out. Rigid antisepsis of hands and instruments in conducting the labor is the best prophylactic. The vulva is cleansed at the beginning of labor, but no vaginal irrigation is used before, during, or after a normal labor, and in such uterine irrigation is held to be a *lapsus artis*. Lacerations are sutured if large, or dusted with iodoform if small. When fever sets in the cause is sought for, and if found in the genital apparatus he uses vaginal irrigations —temporary are preferred to permanent—and in cases of offensive lochia, uterine irrigation with a five per cent. carbolic acid solution. The latter is repeated once or twice, and during its use the vagina is protected by a stream of water. Further absorption of septic matter is in this way prevented. The object of general treatment is to raise and maintain the power of resistance of the system, to enable it to throw off the poison absorbed. To accomplish this purpose the most important vital functions of the organism must be maintained and regulated. These are sleep and digestion; and while these are preserved the system cannot yield to the disease. All measures that impair the ability to take food must be considered objectionable in puerperal sepsis. Experience shows that the resisting powers of the organism are best maintained when *alcohol in large doses* is combined with *tepid baths*. The first results observable under their use are ability to take plenty of nourishment and the setting in of sound sleep, especially in restless patients. Alcohol is exhibited in the form of Stokes' mixture: ℞. Cognac, aqua destil., ää 60.0; vitellus ovi unius; syr. simpl., 25.0, of which one to two tablespoonfuls are given every hour, and between these doses one to three tablespoonfuls of some strong wine. This is continued day and night until sound sleep ensues. To show the quantities taken he cites the instance of two patients, one of whom took, during the first twelve days, twelve bottles of port wine and 1,200 grammes of cognac; and the other, from the second to the ninth day, ten and a half bottles of port or Madeira, and two litres of cognac. But alcohol alone does not bring on a desire for food. This is accomplished by the simultaneous use of tepid baths. Refusal of food, increased somnolency, a frequent and weak pulse, a high and equal temperature, restlessness and delirium, are indications for a bath. Collapse, also imminent collapse, as indicated by unequal temperature and a flickering pulse, contraindicate a bath, while metastasis to the lungs and femoral thrombosis indicate great care in their use. The temperature of the bath should be 81° to 85° F., and in case of great somnolency one or two cold douches should be applied. It should not be extended beyond five to ten minutes, and at times a simple immersion is all that is admissible. He rarely begins with the baths before the third day, and gives one, two, and three baths a day. Under this treatment patients readily take food, and milk, eggs, meat broths, and meat, the latter finely cut or scraped, is freely given, and taken with relish. Castor-oil is at first used to relieve constipation, if present, and later on enemata are employed. Severe pain demands opium and ice to the hypogastrium, the ice being replaced by hydropathic compresses as the pain becomes less severe. After defervescence is complete the patient is for a long time kept on large doses of ergot. The general should be begun conjointly with the local treatment. In the lymphatic form of puerperal sepsis, characterized by tympanites, no great pain, frequent and feeble pulse, singultus, rare or absent vomiting, the puerperal peritonitis of authors, this line of treatment yields admirable results. It remains powerless in the form simulating perforative peritonitis or septic peritonitis after laparotomy, in which intense pain, enormous tympanites, and incessant vomiting are pronounced symptoms. Runge compares the present line of treatment with that of former years. The local treatment was what it is now, except that at one time voluminous irrigations were used for prophylactic purposes, but again quickly abandoned when it became apparent that the mortality rate was increased. The general treatment consisted then, as now, of alcohol, but it was given in small, inefficient doses, and only when grave symptoms arose. Large doses of quinia were given under the sway of Liebermeister's views, for the purpose of reducing temperature. They did not at all influence the course of the disease. Thanks to the labor of Fränzel, Unverricht, and Naunyn, the views as to the injuriousness of fever have been set aside. But quinia, salicylic acid, and the other antipyretics do not now exert as good influences on the course of the disease, but are positively injurious in puerperal sepsis by impairing and destroying the desire for food, and by covering up the real condition of the patient by their physiological symptoms when given in massive doses. The favorable influence on the heart's action and on the respiration, the action on the sensorium, the effect of maintaining and stimulating the desire for food, make the line of treatment now followed out stand out brightly before all others.—*Journal of the American Medical Association.*

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HEART-STRAIN AND WEAK HEART.[1]

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NEW YORK.

CERTAIN forms of cardiac incompetency, which I frequently meet with, have had for me, during the past few years, a special interest. I do not yet know the best term to apply to *all* these cases; in fact, I do not believe, as is already shown by the title given above, that they should *all* be classified in the same division. They offer, in my opinion, various symptoms, are not invariably due to the same causes, and present frequently somewhat different and more or less well-marked physical signs. Occasionally there are in reality no evident physical signs which reveal the condition of cardiac weakness. In the analysis of my cases I find, unfortunately, that in many particulars my histories are imperfect, and especially so from the standpoint where I now desire to study them. In one way, however, I believe this deficiency is desirable, rather than the contrary, for it shows precisely how the cases impressed me at the time notes were taken and the patients under observation. Inasmuch as when many of the facts were recorded I had no idea of utilizing them to support my present views, they are, it seems to me, freer from bias than they might have been under different circumstances. I regret very much to add that search made latterly among hospital and dispensary notes has been relatively of little use to me, since the histories do not often relate to cases of the kind I desire specially to describe, or, if they do, mention is usually omitted of the facts which are of special value, and which pertain either to etiology or symptoms of certain forms of cardiac disease.

Of course, I wish it to be understood, and particularly by those members of the Society who have devoted themselves to the careful and exact study of cardiac disorders, that I have probably nothing *new* to offer *to them*. They are already familiar with the subject of my story; it merely remains to be determined whether they and I have interpreted some interesting clinical facts in a similar or somewhat different manner. Many years ago, as all of you know, Da Costa[2] described what he called "irritable heart." This affection was first brought to his attention during the War of the Rebellion. Large numbers of soldiers were affected with it. It was seemingly brought on by long marches, fasts, exposure, mental anxiety, continued during many months. It was an affection characterized by dyspnœa, pain localized over the heart, palpitations, a frequent and sometimes irregular pulse. The heart was occasionally enlarged; frequently it was of normal size. The observations of Da Costa have been corroborated by several eminent writers; among others by W. C. McLean and by Fraentzel.[3] These authors found in soldiers cases of hypertrophy and dilatation accompanying symptoms of feeble and irritable heart, and resulting from long marches and the pressure of dress and accoutrements, or the hardships pertaining to army life in the field.

In 1865 Thomas B. Peacock directed attention to over-strain as a cause of heart diseases, and according to Leyden[4] was the *first* author who described these cases with precision. Special forms of cardiac disease were recognized by him among the workers in tin and copper mines.[5] In England, also, at a later period, Clifford Allbutt[6] pursued analogous investigations with respect to laborers in other vocations. It was remarked by him that forge-men, barge-men, etc., or those workers who made excessive and prolonged muscular exertion with their arms, were sufferers from cardiac hypertrophy and dilatation. About the same time as Allbutt, Myers observed diseases of the heart among soldiers, due to strain, etc. According to Dr. Morgan, who wrote an essay entitled "University Oars," being a critical inquiry into the after-health of the men who rowed in the Oxford and Cambridge boat-races from the year 1829 to 1869, based on the personal experience of the rowers themselves, *rowing*, unless permanently indulged in, does not cause organic disease of the heart. Undoubtedly in persons predisposed to irritable heart, or other functional cardiac disorder, *rowing* increases it (Da Costa).

At the time Allbutt published his communication on a subject related to that of my paper, little attention had been paid by English writers to the mechanical causes of heart disease. Nothing could be found among them, except here and there a vague statement, as in Hope, where he says that rowing sometimes gives heart trouble. In foreign authors, at the time referred to, little more could be gleaned. The interesting facts studied by Allbutt with much exactness, were, later on, graphically described by Fothergill.[7] The late Dr. Austin Flint, in an admirable chapter on "Functional Disorder of the Heart," already in his work on "Diseases of the Heart," and subsequently in the successive editions of his "Practice of Medicine," showed how mental emotions, the influence of the passions, the improper use of stimulants, might all ultimately produce organic cardiac disorder. Quain[8] also directs attention to the influence of the emotions and prolonged exertion in producing hypertrophy and dilation of the heart, and Seitz[9] has insisted upon the various local and general symptoms caused by cardiac over-strain. In an article entitled, "On the Dilatation and Hypertrophy of the Heart, which are not produced by Changes in the Valves," by Delafield,[10] many valuable facts bearing on this subject can be read. Finally, in the last number (October, 1886) of the *American Journal of the Medical Sciences*, there is a very complete and satisfactory summary of an article by Leyden, in the *Zeitschrift für Klinische Medicin*, previously mentioned, on "Diseases of the Heart resulting from Over-exertion." So far as my knowledge and reading extend, there are few, if any, studies elsewhere to be found which afford a more thorough presentation of this matter. Still there are some features connected with similar and analogous cases which have seemed to me somewhat different from those thus far dwelt upon, at least in a forcible manner, and these are the topics to which I ask your attention. In the hospital and dispensary work, and more particularly in the latter, which I have done for many years past,

[1] Read before the Practitioners' Society of New York, February 4, 1887.

[2] Memoirs of U. S. Sanitary Com., p. 372, Am. Jour. of the Medical Sciences, 1871.

[3] Quoted by Delafield. See Am. Jour. of the Med. Sci., January, 1886, p. 97.

[4] Zeitschrift für Klinische Medicin, 1886, Bd. xi., H. 2 und 3, S. 106.

[5] Da Costa, loc. cit.

[6] Vide. St. George's Hospital Reports, 1870, vol. v., p. 23.

[7] The Heart and its Diseases, p. 343 et seq. Philadelphia, 1879.

[8] Lumleian Lectures, Medical Times and Gazette, 1872, p. 352. Quoted by Delafield.

[9] Deutsches Archiv f. Klin. Med., 1873, Bd. x.-xiii., und Die Ueberanstrengung des Herzens. Berlin, 1871. Quoted by Leyden.

[10] American Journal of the Medical Sciences, 1886, p. 96 et seq.

there scarcely passes a week in which I do not see one or more cases of chronic heart disease brought on mainly by physical over-exertion, and usually of prolonged character. Of course these cases differ from each other in respect of the *stage* of disease when they come under observation. They are unlike, also, in many instances, because the heart is not always affected in a similar manner, without regard to the period of the affection. This may depend upon the nature of the pursuit of the individual, upon his habits of life, upon concomitant or previous diseases. A most important factor, in my opinion, is likewise *the individual himself*. We have no absolute means, so far as I am aware, of estimating the real strength of the heart as a vital organ, except through its power of resistance to certain depressing and altering agencies. We do not know, for example, in advance, and when it is a question of one man or another, whether or not the person who is under consideration possesses a heart which shall be strong to resist great and prolonged fatigue, exposure or want of rest, poor food, or bad hygienic surroundings, the inroads of acute or chronic disease, the evil effects of tobacco or alcohol, nervous exhaustion brought on by over-excitement, or the action of the passions. There is an individual energy or power in the heart of every man, which can alone be properly estimated when it has been tested in different ways, subjected both to physical and mental strain. In this factor consists the tonicity of the heart, a normal property of its muscular tissue, which, if it be diminished, degraded, or lost, results ultimately, and almost surely, in more or less dilation or enlargement in size and weight.

Not a *true* hypertrophy, let us bear in mind, which *invariably* should mean increased propulsive power and energy, but rather that changed and morbid cardiac condition which carries with it always the idea of incompetency or lack of healthy force.

In this connection I beg leave to refer to illustrative cases:

Case I.—J. C——, aged eighteen, single, cabin-boy on board coaster; has always enjoyed excellent health, and had uniformly good habits until three weeks ago. At that time, after a prolonged spree, in which he indulged freely in smoking and drinking, he was attacked with sudden pain in the præcordial region, accompanied with dyspnœa and palpitation. Some cough and diarrhœa during twenty-four hours. Complains now of moderate dyspnœa, which is constant. Exertion or excitement increases this symptom notably, besides bringing on cardiac palpitation. At present he sleeps well, and has no cough. He has not worked since he was taken with the symptoms referred to above, has not smoked, or committed any excess. Patient admits that he has had for many years "short wind" when he runs or exerts himself vigorously. During the past two years he has had no suffering from this cause.

Physical examination shows that the heart is normal in size; no murmurs; regular action; impulse at apex normal in force; both sounds in this region somewhat accentuated; at base, over pulmonic and aortic areas, the first and second sounds diminished in intensity, but clear; no thrill. Pulse, 88, regular, no intermissions, somewhat weak and depressible. The lungs revealed vesicular emphysema on both sides, moderate in amount.

Ordered, Tablets nitroglycerine, $\frac{1}{100}$ gr., t.i.d.

Three days later patient returned; no improvement.

Ordered, Tr. belladonna, five drops every six hours.

Patient not seen again.

Here, then, is an example of temporary cardiac weakness brought on, evidently, by immoderate smoking and drinking. There was no history of excessive work at any time, and nothing like physical strain, in the ordinary acceptation, had occurred. Previous to the initial symptoms mentioned, the patient had never suffered from symptoms which were referable to irregular heart action.

Case II.—P. B——, married, merchant, aged forty-one, came to my office on November 11, 1881, suffering from severe cardiac palpitation. He stated that he had been enjoying his usual good health, when he passed through several hours of excitement and anxiety at a fire, which occurred six weeks previously, and had destroyed much of his valuable furniture. Since that time he has had frequent and distressing cardiac palpitations, accompanied with pronounced difficulty of breathing. The dyspnœa was not an entirely new symptom with him, as he had occasionally noticed it before the time of the fire, but never had it been so pronounced and unpleasant as during the past few weeks. On questioning this patient closely I found that he had cardiac palpitation sometimes when he had not taken food during several hours. Horseback exercise, of which he was very fond, never occasioned it.

Physical examination showed slight increased dulness to the right of the præcordia. There was a soft, blowing murmur accompanying the first sound, and heard with greatest intensity over the xyphoid cartilage. Murmur was also heard over apex, but with very slight intensity. No mention was made of any epigastric pulsation. Pulse, 84, weak and depressible.

The patient himself was of large, vigorous frame, dark complexion, had passed several years in Cuba, and had had one or more attacks of biliary colic.

Tr. belladonna, tr. nux vomica, and sp. ætheris comp. were prescribed in moderate doses, three times daily.

In this case mental anxiety and excitement were evidently the determining factors in causing cardiac incompetency.

I might cite examples in this place from my private records to show the effect of lithæmia, pronounced gout, atonic dyspepsia, anæmia, excesses of tea or coffee, uterine disturbance, etc. in producing morbid cardiac conditions. In view of the time allotted to me I shall refrain. I desire, however, to read excerpts from notes of one case of notable cardiac displacement in connection with fibroid phthisis and old pleuritic and pericardial adhesions, in which there were no rational symptoms of heart disease. A. S——, aged twenty-four, iron-worker. Patient began to suffer five years ago from cough, dyspnœa, and moderate expectoration. Soon he lost flesh and strength, and had several pulmonary hemorrhages. At present patient has pain in his chest, and is pale and anæmic. His appetite is good.

Physical examination revealed the usual signs of fibroid phthisis and pleuritic adhesions, especially marked on the left side of the chest. Heart: The greatest intensity of the impulse was discovered one inch to the left of the left nipple. No murmurs. First sound at apex accentuated; second sound not as loud as normal. At base, over aortic area, slight blowing murmur accompanying first sound; second sound diminished in intensity. Near left nipple a friction sensation is distinctly felt. A blowing murmur is heard in vessels of the neck, which is thought to be due to changes at the aortic orifice.

Patient improved under following treatment: Creasote, ♏j.; glycerine, ʒj.; whiskey, ʒij. t.i.d.; and hydrarg. bichlor., gr. $\frac{1}{16}$, with tr. cinchona comp., ʒj., after meals, t.i.d. Local applications of ungt. iodinii were made to the chest-walls.

This case had a considerable interest for me from the fact that although the heart was drawn far away from its normal position, and the concomitant conditions were such as to interfere greatly with the circulation, yet the patient never in reality complained of the ordinary rational symptoms of cardiac weakness.

In the majority of cases of heart disease due to over-exertion, which I have encountered, the affection has come on gradually. There has been in these cases no sudden irruption of morbid changes. Symptoms have shown themselves at first, and with some differences as to their manifestations, and subsequently more or less *visible alterations*, as indicated by physical exploration have become evident in the heart and blood vessels.

All trades of a laborious kind, and most trades should

thus be described, may be efficient causes of chronic heart disorder. Yet some occupations especially predispose to cardiac incompetency, whether it be merely functional or organic. Notably are to be found in this class those vocations in which there is continuous work with the arms, or those in which heavy burdens are frequently lifted, and where, therefore, great occasional efforts act powerfully also in producing disease. In many of these cases vesicular emphysema, more or less localized, or generalized, is such an ordinary accompaniment that I consider it somewhat remarkable when I do not find marked evidences of its presence. Other lesions —as those of the liver, spleen, stomach, kidneys (usually of the nature of congestions) (Delafield)—are frequently secondary to the cardiac disorder, and modify it as complications rather than as causes. In order to be explicit and guarded in the interpretation of the cardiac cases I am studying, I would say here that I eliminate such as are found in individuals who have suffered previously from one or more attacks of well-marked articular rheumatism. I do this because rheumatism of the joints is such a frequent cause of *valvular* disease that its pre-existence might invalidate some of my observations. In regard to the use or abuse of alcohol my stand-point is somewhat different. Alcohol, when it affects the heart injuriously, shows its evil results ordinarily in the muscular fibres or the vascular walls, and not directly at the heart orifices. Fatty degeneration of the former, with more or less atheroma of the latter, are familiar changes which bear witness after death to its poisonous effects. When, therefore, such changes exist during life, the development of symptoms of cardiac weakness may be considerable and rapid in a given case from a relatively small amount of physical strain. The diagnosis, however, of these changes in their early stages is a matter of extreme difficulty, and is, I believe, made at times chiefly by reason of the manifest inefficiency of our ordinary means to strengthen cardiac systole, and by our tactile investigation of arteries within reach (temporals, radials).

Even these diagnostic tests may sometimes lead us into error, since our touch is occasionally deceptive, and our poor therapeutic results may depend upon imperfect knowledge and use of drugs, and nothing wholly satisfactory can be affirmed unless the patient dies and an autopsy is made. The first symptoms of cardiac strain or weakness are usually rational. These are—1, palpitation; 2, præcordial pain; 3, dyspnœa. All of these may be present; one, two, or all may be absent. Ordinarily the first symptom of over-exertion is cardiac palpitation. This symptom at first appears after prolonged effort, or some instance of *temporary* and *unusual* exertion. As an example of this kind the following case is interesting:

Case III. *Cardiac irritability or heart-strain; slight cardiac dilatation, with incompetency of the mitral valve; areas of pulmonary emphysema; subacute gastritis.*—W. H. R——, aged forty-five, driver, came to New York Hospital, Outdoor Department, October 15, 1886. Patient has suffered from palpitations of the heart during the past twenty years. They began when he served in the United States Army in 1862. One month ago he was attacked with acute diarrhœa and profuse bloody stools. Since his convalescence, a period of three weeks, he suffers from a sensation of weight over the stomach, particularly after meals. He has moderate pain now at all times over the epigastric region, and this pain is notably increased by pressure. The xyphoid cartilage is very tender when it supports any weight. These pains came on suddenly after lifting a heavy case, and about one hour subsequently.

Physical examination to-day (October 15, 1886) shows marked epigastric pulsation. Apex-beat of the heart is not visible, nor can it be accurately located by palpation. The area of superficial cardiac dulness extends from the xyphoid cartilage slightly to the left of a vertical line passing through the left nipple. The first sound of the heart is accompanied by a moderate, soft, systolic, blowing murmur.

℞. Tinct. strophanthus .... 3 ss.
Syrupi aurantii..... ℥ ij.
M. Sig.—3 j. t.i.d. after meals.

October 18th.—Feels better; has not sensation of pressure over the heart; pain in the epigastric region about the same. Pulse, 100; regular, no intermissions, depressible. Slight blowing murmur at apex; apex-beat still very difficult to locate, except by auscultation. Patient states that every time he has lifted a heavy burden during the past ten years he has suffered from pain in the region of the heart and over the left hip and from *palpitations.*

He has never suffered from dyspnœa after making excessive physical efforts until two weeks ago. Since that time, when he remembers having lifted a heavy bar of iron, he has had considerable difficulty of breathing, even after moderate exertion. During the same period, also, he has suffered from the sensation of a heavy weight over the stomach. He never had this symptom before the time mentioned. Patient's legs are not swollen; he passes about his usual quantity of urine. On examination there is no albumen present. Patient never drank to excess. His use of tobacco is moderate. No history of syphilis.

℞. Repeat strophanthus.
Pulv. lactopeptin, gr. x., after meals.

October 25th.—Complains of palpitation, occasional pain in the præcordial region, less dyspnœa, pain in epigastric region, eased by pressure and increased by walking.

℞. Fl. extr. convallaria.
Sig.—Gtt. x. every four hours.

1. Sometimes palpitation shows itself when the patient is seated, and resting after a meal, or when relatively weak from lack of food during several hours. Occasionally patients are awakened from sleep at night with most distressing subjective feelings of cardiac palpitation. As an instance of this kind I offer the following:

Case IV. *Weak heart occurring without discoverable cause; palpitations; dull localized pain over præcordia; vague feeling of oppression; no evident dilatation or hypertrophy of the heart.*—Mrs. F——, married, aged forty-two, gives a doubtful malarial history; came to my office on March 26, 1885. At that time she complained of the following symptoms: A raw sensation in the throat, no cough, expectorates occasionally a small quantity of white viscid phlegm, suffers a great deal from a weak and a dull sore feeling at the epigastrium. These abnormal sensations are relieved for a while by a moderate amount of light food, and particularly by stimulants. Patient has no flatulence and no other dyspeptic symptoms; bowels are regular. Patient is a great sufferer also from cardiac palpitations, which come on with no assignable cause. Her heart flutters and quivers, especially at night, when she first goes to bed, and this symptom is about equally severe in any decubitus. After sleeping a few hours, when she awakens, her heart beats tumultuously and painfully. On physical examination the heart is of normal size, beats feebly, but no murmurs are discovered. Veins of left arm are quite prominent. Patient complains of defective circulation—always feels tired. The weary, gone feeling is located especially over the præcordial region. If patient did not take a long, deep inspiration occasionally, she feels as if her breathing would stop altogether. Treated by stomachics, quinine and arsenic, heart tonics, during five weeks with no beneficial effects.

To some of these patients the heart appears to beat very rapidly, tumultuously, and with increased force. To others the heart flutters, quivers, beats irregularly, with diminished energy, and occasional intermissions are noted in the radial pulse. These different sensations

are observed by the patient and reported to the physician. I have known, on several occasions, such palpitations to be the cause of much mental distress, and particularly is this statement true of those palpitations which take place during the night and occasion great fright when the patient is awakened by them.

2. It is no unusual thing to have these palpitations accompanied by notable dyspnœa. This dyspnœa may also show itself previous to, or subsequent to, the palpitations. When it exists at the time the patient is suffering from palpitations it is very distressing. The patient feels, on rare occasions, as if he would actually stifle; and if in the recumbent position, is obliged to raise himself to a sitting posture to obtain the air essential to the demands of respiration. Ordinarily the dyspnœa is much less, or milder in type, and is merely sufficient to aggravate and heighten the suffering occasioned by the palpitations. This is true when the patient is quiet. When any physical exertion is made the dyspnœa is *increased*, as a rule, and yet, singular to say, I have seen those in whom moderate exercise in walking, or riding on horseback, did not increase dyspnœa. Dyspnœa may be the first symptom accused by the patient. He may have no cardiac palpitation; he may not feel his heart at all. He is simply conscious at times of the desire to inflate his lungs thoroughly, and thus inspire all the air possible. He has a somewhat oppressed, weighty feeling in the chest anteriorly, which is almost always present. He recognizes easily this abnormal sensation, although he cannot always define or describe it. This form of dyspnœa may not be increased by the advent of cardiac palpitations, although it usually is. As an example of this kind, I offer the following history:

Case V. *Cardiac weakness following moderate dilatation and hypertrophy, probably caused by rowing; congestion of the liver, accompanied with slight jaundice, perversion of taste, and dizziness.*—W. L——, married, aged thirty-two, merchant, came to see me professionally June 4, 1886. He complained of difficult breathing, the cause of which he was unable to assign. His bowels were regular, and there were no symptoms of dyspepsia. During many years he was very fond of athletic sports, especially of rowing, to which he had devoted himself. He has always been temperate in his habits, smokes moderately, and only drinks tea or coffee once a day. At present his skin is somewhat muddy, and his sclerotics have a yellowish tinge.

Physical examination shows somewhat dilated and hypertrophied heart. Its action is regular and tolerably strong. There are no murmurs. Moderate bulging of both sides of the chest anteriorly indicates the presence of pulmonary emphysema, which assumption is confirmed by percussion and auscultation. No bronchitis. Spleen normal in size. Liver *somewhat* enlarged, the enlargement being probably due to congestion. Two or three weeks ago, on presenting himself for examination at a life-insurance company, he was refused, on the ground that he had an "athletic heart." His urine was carefully examined, and proved to be normal. I prescribed (June 15th) carbonate of ammonia, belladonna, and ignatia, several times a day, and told him to continue the treatment several weeks.

November 11, 1886, five months after I first saw my patient, he wrote me that he had never felt better, and weighed twenty pounds more than when I last prescribed for him. "This may be," he writes, "because I took little or no exercise last summer. Following your advice I did not row at all, and previously I had been in the habit of rowing a *great deal* during at least twelve years back. I took about three bottles of the medicine you prescribed, and think this must have done the business, as after that I did not have any trouble, either from palpitations or from shortness of breath. My appetite has been splendid, I sleep like a top, and, in fact, my health has been generally fine. As regards my life insurance, I was passed by the New York Life Insurance Company, and, after passing through the hands of about ten doctors, was pronounced a good risk."

3. Pain in the præcordial region is a symptom of considerable value at times, as pointing to cardiac weakness, but cannot be relied upon as confidently as dyspnœa and palpitation in making this diagnosis. It may be present here, and be nothing more than the evidence of localized neuralgia in the pectoral or intercostal muscles. Frequently, pain in the epigastrium is undoubtedly due to heart-strain or heart-weakness; again, it is but the symptom of subacute gastritis quite independent of cardiac debility. These facts have been latterly insisted upon by Dr. P. Müller. In his recent thesis on the subject of cardiac dyspepsia, he "maintains that there are few affections of the heart which are not accompanied, at one time or another, by gastralgia, dyspeptic troubles, or even serious lesions of the stomach."[1]

Pain in the left axillary region may be attributed to the heart, when it is caused entirely by localized pleuritis. There is a dull, heavy, constant pain seated over the right ventricle, which is usually increased by slight pressure (although not always), and which I have learned to believe is of cardiac origin.

The following case is an exceptional one, in which *pressure* relieved this pain temporarily:

Case VI. *Aortic regurgitation; hypertrophy, with dilatation of ventricles; syphilis; no rheumatism; overexertion; principal symptom, localized pain.*[2]—M. D——, married, aged twenty-eight, laborer, English, came under my care November 17, 1874. Patient has been suffering two and a half years. Previously never ill. Had syphilis ten years ago, followed by secondary symptoms; been a free drinker. His symptoms began with pain in back. Six months later had pain in præcordial region. This pain persists at present; is most intense at night, and often prevents sleep. It is brought on during the day by any physical effort. It can usually be relieved, for a time, by pressure over the heart. Patient often vomits during attack of pain. Has been slightly jaundiced several times; does *not* suffer from *dyspnœa* or palpitation. Pulse, 84; respiration, 20.

Physical examination shows aortic regurgitation, hypertrophy, and dilatation of heart.

Ordered iron, potass. iodid., empl. bellad., light diet.

Sometimes sharp, lancinating pains in the præcordial region, which show themselves suddenly and then disappear as quickly—pains which shoot up the neck and down the left arm, pains which have none of the intense and indefinable agony connected with them that mark those of true angina, and which do not leave behind points upon which pressure with the fingers brings out a cry—these pains, I believe, are frequently of cardiac origin. Not that I believe they are *seated* in the heart,[3] but at least they show themselves often in connection with other evidences of cardiac strain, and are, moreover, present when there is no proof that they can be fairly attributed to changes in adjacent organs or structures.

Curious to say, I have met cases—not frequent ones—where the patient gave such a history, and showed such physical signs as could be explained solely by the pre-existence of prolonged anterior effort, and yet, despite these facts, had never consciously suffered from the rational symptoms to which I have previously referred, and which ordinarily point, with unerring certainty, to heart-strain. In such examples we must interrogate the pulse and the heart itself. It is only at a later period that the urine, or the condition of the lower limbs, makes the presence of heart-strain additionally evident.

The pulse is usually, in the first stages of heart-strain, somewhat accelerated, and this is especially true if the strain of the heart follow any sudden or intense effort.

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[1] Vide Medical Record, December 11, 1886, p. 659.

[2] In this case the cardiac hypertrophy was considerable when it came under observation.

[3] I am familiar with the old belief that the heart itself is insensible.

It is also true when the heart has been called to do more work than it can accomplish during the convalescence from acute febrile disorders, and when the fibres have not wholly recovered from physical changes which had previously affected them.

This statement, however, has its exceptions, and of these I would like to direct attention to the following:

CASE VII. *Heart-strain following chagres fever and pneumonia.*—T. M——, single, student, twenty-three years of age, came under my care October 11, 1886. At that time he complained of frequently recurring nausea, and of an ill-defined feeling of malaise over the chest anteriorly. Patient contracted Chagres fever on a trip to Panama three years ago, and since that time has often had symptoms of gastric irritability and torpid liver.

Ordered Pil. extract. colocynth., quinine, and belladonna, t. i. d.

November 6th.—So far as stomach is concerned, feels well. Still complains of occasional headache, although it is less frequent and painful than it was some weeks since. Upon running a short distance he suffers from great oppression and his heart seems almost to stop. These symptoms come on at times immediately after slight unusual exertion; at times several hours elapse before they manifest themselves. Whenever they occur, they invariably last several hours. Sometimes the oppression and apparent cessation of heart-beats occur without assignable cause. Occasionally the attack will occur during the night and awaken him from sound sleep. During its duration, which often lasts, off and on, several hours, he feels as if he would die. He had pneumonia of the right lung three months ago, and since his recovery from that disease has been considerably worse than ever before. Stimulants usually relieve him somewhat, even when he is suffering most acutely.

Physical examination shows pulse 72 per minute, quite full and strong, although somewhat irregular; no intermissions. Heart: Apex-beat carried somewhat toward the left of normal beat, in sitting posture. No marked increase of area of dulness over præcordial area; no thrill; no marked irregularity of cardiac beats appreciable upon palpation; soft blowing murmur at apex, preceding first sound of heart and following second sound. At base of heart, especially over aortic area, slight blowing murmur accompanies the first sound. This murmur is also heard in the vessels of the neck. The second sound of the heart at the base is *clear* and *normal* in strength.

Ordered Tablets tr. strophanthus hispidus, āā ℥ij., t. i. d.

November 9th.—Patient has taken medicine regularly; feeling in better condition, and not so much troubled with oppression as he was; has had no palpitations (although has not run at all for some days); has not had such an intense desire to take a long breath from time to time, which previously was imperative and recurred constantly every few moments. Patient can wear his vest buttoned; before he began strophanthus he was obliged to open it to give himself some relief during his attacks of oppression. He is not nervous, and his symptoms do not appear to be due to flatulent dyspepsia. Respiration, 24, regular, somewhat shallow; pulse, 76, somewhat more regular. Heart-systole decidedly more forcible; blowing murmur at apex and base more marked than last time; no epigastric pulsation visible; urine increased in quantity. Repeat strophanthus, and, in addition take pill of iron, arsenic, and quinine, t. i. d., at meal-time. All very active exercise prohibited for some months. A day or two later, patient left the city and went to Virginia.

November 28th, I received a letter from him in which he still complained of feeble heart-action and persistent headache; his appetite was good and bowels regular. Despite, however, these facts, and although he lives a great deal in the open air, he has continuous cold extremities, and is unable to keep them warm.

In instances, on the other hand, where the sum of physical effort each day is very considerable, as in the vocations of numerous workers (typesetters, shoemakers, plasterers, painters, weavers, etc.), although upon no single occasion is there any excessive physical effort, the pulse is ordinarily somewhat slower than normal.

The pulse which beats rapidly *may*, or *may not*, be weak and compressible. These qualities of weakness and compressibility are, however, adjoined most frequently to the slow pulse of prolonged heart-strain. Irregularity of the radial pulse-beats is often observed in both classes of cases. Evident intermissions in the pulse are not observed in the primary stages of heart-strain. In fact, it is only when the heart-fibre is evidently somewhat degenerated, or the cavities have become manifestly enlarged, that I have been able to notice occasional intermissions. When sphygmographic tracings have been taken, especially in advanced cases, they have shown marked lowering of arterial tension.[1]

The heart itself is in a variable condition. At first, and even subsequent to repeated and great physical efforts of *somewhat temporary* nature, the heart shows no evident increase of size. Its sounds may or may not be notably weakened. Sometimes both sounds of the heart are clear and markedly accentuated, and have almost a metallic clang or tone. This metallic ring I have heard far oftener accompany the first than the second sound. As I have remarked in the radial pulse, so I have noticed in the heart, that the beats are more rapid, as a rule, when there has been acute cardiac strain; when the strain is the result of almost continuous physical effort, during many years of severe labor, the heart-beats are ordinarily somewhat diminished in frequency as compared with those of perfect health. In either case there may be some irregularity in the force and rhythm of successive beats. True intermissions in heart-systole are only recognized when close observation already indicates advanced organic changes, causing degeneration of muscular fibres, or their distinct stretching or dilatation. A soft blowing murmur, heard more or less distinctly over a large portion of the præcordia, is not infrequent. It is usually heard with most intensity near the apex. It may be loudest over the aortic area, or at the xyphoid cartilage, and indicate aortic regurgitation. Inasmuch as the former murmur sometimes disappears after weeks or months of treatment, I have under these circumstances considered it to be due to temporary dilatation of the mitral orifice, brought on by relaxation of the cardiac walls.

Except for its presence, it would be often difficult to say positively that the heart gave evidence of any organic change. This murmur, when it accompanies the first sound of the heart, may possibly be allied with the blood-condition of general anæmia. Whenever the murmur is not heard synchronous with the first sound of the heart, either at the base of the heart or in the vessels of the neck, it cannot properly be confounded with a blood-murmur. Frequently the sounds of the heart are somewhat reduplicated. This reduplication of itself *shows weakness of the heart*, and possibly that the walls of the *two* ventricles do not contract synchronously[2] with each other. No thrill is ordinarily detected over the cardiac region.[3] At first, as I have stated, there is no enlargement of the heart, and this organ may be considered as affected with mere functional disorder. As time elapses, however, and particularly if the daily strain, physical or mental, continues, the heart shows evident signs of slight enlargement, due to dilatation of the cavities and *thinning* of the cardiac walls. It must not be thought that it is invariably an easy task, in physical diagnosis, to make out in a satisfactory manner the signs of enlargement of

[1] This fact was shown to the members of the Practitioners' Society at the meeting held December 3, 1886. Case of H. W——, vide MED. REC., December 18th.

[2] I have reported a case further on, in which the reduplication appeared to me to be explained by the existence of an adherent pericardium.

[3] The exceptions to this rule are found only in cases in which heart-strain has produced evident sclerotic lesions of orifices or valves.

the heart. Occasionally the accompanying conditions obscure this change very much. There are many instances in which more or less pulmonary emphysema is present, that either changes the heart's position or else covers it in a large area. If together with this concomitant state the heart is beating feebly, inspection and palpation reveal but little, if anything, that is reliable. Percussion is, also, very puzzling. We may be able thus to limit the heart accurately toward the median line, but above, below, and to the left it will often leave us in very considerable uncertainty. Auscultation will at times enable us to fix the greatest intensity of the first sound of the heart, and hence to assign the correct location to the apex; but even auscultation in instances of very weak heart will leave us in doubt, *i.e.*, in certain cases of convalescence from fever or other acute disease. Of course it should be understood that I am referring ordinarily to cases of slight enlargement of the heart, since in almost all cases in which the dilatation, with or without slight thickening of the ventricular walls, is at all pronounced it can be unerringly stated. In cases of heart-strain, or weak heart, which occur in the *higher classes*, it is a most unusual circumstance to find, concomitantly, evidences of arterial degeneration, at least among youthful subjects, occasioned by a similar morbid process to that which produced the cardiac disorder. Among the toilers, or those whose whole existence is one persistent manual effort, it is very frequent to note accompanying arterial changes which indicate commencing or advanced sclerosis. I have encountered already more than one case of sudden regurgitant murmur, heard with the second sound of the heart, and propagated downward and to the left, which I felt confident was due to sudden rupture of one aortic cusp. I have never met with any murmur which I thought should be explained by rupture of the mitral or tricuspid valve,[1] but relative incompetence of these valves, as shown by rapidly developed murmurs, which continued during many months without change and despite appropriate treatment, have convinced me of the possibility of *acute dilatation* of the *mitral* and *tricuspid* orifices, which was more or less lasting, and at times, although by no means always, of serious import.

The following is an instance of the former kind, which I consider important and suggestive:

Case VIII. *Acute heart strain due to over-exertion in attending to household duties, etc.*—A married lady, forty-one years of age, mother of several children, had quite obstinate bronchitis during several winters. Also had, after birth of last child, during a year or two, somewhat excessive menstrual flow at each monthly period. Other than these affections, patient has always been an extremely vigorous woman. During the late Christmas season patient tired herself a great deal with shopping, visiting, making arrangements for home entertainments, etc. She sat up late and rose early in the morning. She was on her feet almost constantly during fifteen to eighteen hours of the twenty-four, and had upon an average, during a period of one week, only about six hours' sleep each night. Two days after Christmas my patient was taken suddenly with pain in the epigastric and præcordial region, and fluttering or palpitation of the heart. The sensations in or around the heart were quite distressing and made her feel anxious. Patient also had a choking sensation in the throat, syncopal tendency, especially when she had been without food several hours, and intense headache. There were no signs of dyspepsia; bowels regular; no signs of pleurisy or intercostal neuralgia. Upon auscultation there was a soft blowing murmur synchronous with the first sound, and heard with most intensity below and inside the left nipple.

The second sound at the same level was also somewhat impure, but this impurity was scarcely sufficient to be characterized by the term "murmur." The pulse was somewhat frequent, quite weak and depressible, and showed slight irregularity of successive beats. In the course of one week relative repose, more prolonged sleep at night, and the use of wine of coca several times a day, together with two or three milk-punches in twenty-four hours, restored the patient, apparently, to her former condition of vigorous health. The blowing murmur at the heart-apex had diminished, but not entirely disappeared. In the case just reported I recognize distinctly a case of acute heart-strain, moderate in degree, and of short duration. Cases similar or analogous to this one I have frequently seen. No doubt every general practitioner is familiar with them. At the same time I feel obliged to add that they are frequently ignored, and I do not believe that they have yet been emphasized sufficiently by writers on medicine so as to make the condition one which is to be constantly looked for, and, when encountered, to be energetically and judiciously treated. There are thousands of men and women in our large cities—brokers, bankers, business men engaged in large, important, and anxious business relations; there are mothers of families, spinsters young and middle-aged, devotees of fashion, frequenters of innumerable dinners and parties—who complain at times of being tired out, run down, having need of change, of rest, of freedom from care or dissipation, and who come to their family physician for advice. Usually such patients are treated as being anæmic, or neurasthenic. So they frequently are; but, after all, what is their most imperative requirement, and which is the *organ* most at fault and most needing rest? Many, many times I could answer truthfully, it is complete repose of body and mind that they require, and *the heart* is the *organ* which gives signs of special weakness—functional or organic, or both.

We should, therefore, in my opinion, recognize in all prolonged, continuous, and undue physical or even mental effort the source or origin of many morbid cardiac conditions.

As an example of the latter I offer the following:

Case IX. *Weak heart; cerebral and spinal anæmia, caused by mental overwork.*—Mr. B——, aged thirty-five, private tutor, married, smokes and drinks moderately, formerly much given to athletic sports, came to see me November 1, 1884. During past few years this patient has become mentally exhausted through continuous teaching and study. At present he complains of painful points over lower cervical and upper dorsal spine. This morning had an attack of "goneness" at region of heart; relieved by whiskey. During the past summer, and at the present time, patient has frequent fluttering, and very weak, distressing ("gone") sensations in the præcordial region.

Physical examination shows weak, slow cardiac action, and markedly weak pulse; no other evidence of structural lesion of the heart.

Ordered Tr. digitalis, ammonii carb., and ergot, in moderate doses, every four hours. Thermo-cautery applied to back of neck; mild galvanism to cord and brain daily.

November 22d.—Heart continues to annoy him a great deal, especially at night.

December 1st.—Complains of heart principally—feels weak from heart—otherwise would be strong and well. Yesterday had a pleasant evening at home; went to bed feeling bright and well. In a short time after going to sleep, awoke with a sinking sensation around the heart, accompanied by nausea, and numbness of the lower limbs. These horrid sensations lasted four hours, despite ergot-mixture, ammonia, local friction, etc. Condition of heart last spring was one of over-excitation; so much, indeed, was this felt to be true that my patient thought at times his heart would rupture from excessive action. At present there is extreme weakness of heart-action, which is accompanied by a weary sensation in the back of neck.

Physical examination to-day reveals a soft, blowing murmur, not loud, heard at the apex of the heart, and in the vessels of the neck, and accompanying the cardiac

[1] Such cases have been reported by Da Costa. See III. Toner Lecture, Washington, 1874.

systole. The countenance is pale and there is evident anæmia. No history of malaria.

Ordered Pil. Vallet, t.i.d. Smoking, tea, and coffee forbidden.

December 30th.—Suffered a great deal from weak feeling around the heart three days of the present week. This unpleasant sensation is more relieved by the use of convallaria than by that of digitalis. Patient is stronger, less irritable, sleeps better, and his heart troubles him less frequently and less intensely than it did two months ago.

While a cardiac dilatation may become developed in the manner referred to, I cannot doubt that not infrequently, after great or frequently repeated physical effort, myocarditis and fatty degeneration of heart-walls will surely be effected. Occasionally we may indeed look for a sudden rupture of valve, giving rise to all the secondary effects of such a condition, or for an inflammation of orifices, which will sooner or later become allied with chronic sclerotic changes at these regions and throughout the arterial system. One of the surest indications of heart-strain, or weak heart, when it is found, lies in the alterations of the urinary secretion. The bulk of the urine may not vary notably at first. Soon, however, it lessens or increases in quantity, and deepens in color, or becomes more watery. The former condition is that indicative of lowered heart-power, especially in so far as it affects the cardiac muscle. The latter state shows marked nervous irritability, and is apt to occur whenever the heart-strain is the result of excesses in which mental impressions are most active. I have remarked it whenever the cardiac strain was under the evident influence of intense study, late hours, undue excitement of business, pleasure, or sexual relations; of abuses in the use of tobacco, tea, coffee, and alcohol. A trace, and even a moderate amount, of albumen has been noted in the urine more than once, when neither the number nor nature of the casts, the rational symptoms, or, indeed, the general condition pointed very clearly to the existence of chronic renal disorder. The following case appears to me of some interest in this connection:

Case X.—H. W. J. T——, single, aged thirty-five, came to me last spring, stating that he had been refused by life insurance companies on account of presence of notable quantity of albumen in his urine. At that time he had few or no rational symptoms of disease of the kidneys. On examination, specific gravity of urine was 1.026; distinctly acid; no sugar; no bile; urea, sixteen grains to one ounce; micturition regular; albumen, fifteen per cent.

Patient was advised to drink abundantly of milk; to rest from business cares as far as possible, and to take tr. ferri perchlor. in moderate doses. At the end of June patient passed under the care of Dr. A. L. Carroll, of Staten Island.

On July 31, 1886, Dr. Carroll wrote me that the examination of urine on June 22d showed eighteen per cent. albumen; on June 30th, twelve per cent.; on July 9th, twenty-three per cent.; on July 27th, twenty per cent. Specific gravity from 1.022 to 1.028.[1]

In specimen of July 9th two or three small hyaline casts were found; in the others, *none*. Sphygmograph showed rather high tension. Dr. Carroll thought he detected some indications of "strain" of the right heart, and wrote: "You are, I presume, aware that he (patient) was for a long while enthusiastically addicted to athletics, especially to rowing contests, and that his mother has valvular disease. The absence of other symptoms in his case, and the persistently large quantity of albumen, seemed to me to negative a purely local causation of increased blood-pressure, particularly when considered in conjunction with the maintenance of the excretory renal functions." Patient "professes to feel quite well physically." "Whether to ascribe his disorder to obscure right-heart obstruction, to incipient waxy kidney, or to some persistent local lesion," was an undetermined matter to Dr. Carroll as to myself, at the date of the letter referred to above.

Between July 31 and September 26, 1886, Dr. Carroll saw our patient twice. "On both occasions the albuminuria was increasingly persistent, and the last specimen of urine examined contained a very few small hyaline casts, though no other anatomical elements. The specific gravity was 1.031; albumen, twenty-eight per cent. (by volume) (August 23d). Total amount of urine daily about normal (?). "The patient expressed himself as feeling perfectly well in all respects." Dr. Carroll and I at this time believed in the existence of chronic parenchymatous nephritis, although I agreed with him "that it was something new to find so few casts in this condition after an undoubted existence of more than five months, and probably much longer."

October 4, 1886.—Examination of urine showed—"specific gravity, 1.024; albumen, twenty per cent.; two or three narrow and extremely transparent hyaline cylinders, . . . mere albuminous films, requiring delicate management of illumination for their detection." "In many hundreds of urinalyzes," says Dr. Carroll, "I have never met with a case which puzzles me to such an extent." A few days later Mr. T——, at my suggestion, was put on tincture of strophanthus, with the approval of Dr. Carroll.

On October 1, 1886, I made the following notes at my office when Mr. T—— called to see me: "Looks pale, although he says that he feels very well. No œdema of face or limbs; has had headache only once during the past few weeks; appetite fair; heart does not annoy him; has had once or twice cardiac palpitations on awakening suddenly at night; no dyspnœa; no præcordial pain. On physical examination I find heart-sounds rather weak; apex-beat somewhat difficult to localize by palpation; am able to do so by auscultation, and find it beats below left nipple in sixth interspace; no murmurs; regular pulse, 72; no pain in back." [Thought abuminuria might perhaps be due to deficient heart action.]

On November 8th Dr. Carroll wrote to me that he had seen Mr. T—— twice since he began taking strophanthus, and continued his letter as follows: "On the first occasion there was little or no indication of its action in the sphygmographic tracing, and I increased the dose. At his second visit there was a diminution in the amount of albumen. On October 18th the specific gravity of the urine was 1.024; albumen, one-fifth; on the 30th, specific gravity, 1.023; albumen, one-seventh. In neither instance did I find casts. He says that he feels remarkably well."

On November 30, 1886, Dr. Carroll again wrote to me in regard to Mr. T—— (in answer to my request by postal to know how he was) as follows: "Mr. T—— has been unable to renew his supply of strophanthus for more than a week before his last visit to me (on November 21st); but the effect of the drug seemed to be continued. The amount of albumen was at that time further reduced to one-ninth by volume; specific gravity of urine, 1.026."

Remarks.—In view of the interest of this case, as it seems to me, I have requested Dr. Carroll, and received permission from him, to use the observations contained in his letters to me. I have not hitherto been able to decide to what degree precisely the condition of the heart has been instrumental in occasioning the albuminuria. That it does cause a part of it seems fairly probable. And, if this be true, I think we shall be prone to admit that, in certain instances, a heart which is undoubtedly somewhat dilated, and even though the usual rational symptoms of its incompetency are lacking—*i.e.*, dyspnœa, pain, palpitations—yet the amount of albumen eliminated by the urine may point indubitably to the fact. If our case had been accompanied by diminished amount of urinary excretion it would be, in my opinion, less conclusive than it is, in view of what we know of Bright's disease. Of course one such case

[1] The albumen was estimated by volume.—A. L. C.

as the foregoing does not prove my proposition; but, as I believe I have seen analogous conditions several times previously, I now wish to call attention to them.

The following case is of interest in showing, among other matters, the fact that when there is notable cardiac weakness in connection with co-existing or pre-existing chronic renal disease, the use of cardiac tonics may increase manifestly the quantity of albumen eliminated by the kidneys, while the bulk of urine is not much increased even during the early days following its administration, and later diminishes considerably. This case is likewise of value as affording evidence of the fact that pulsation in the second, third, and fourth left intercostal spaces is not invariably found in cases of cardiac dilatation and weakness, contrary to the view ably supported by W. Russell.[1]

Case XI.—J. C. H—— entered St. Luke's Hospital March 23, 1886. Patient had pleurisy in 1883, and since that time suffered occasional pains in præcordial region. Syphilis in 1882. Occasionally drank to excess. Formerly very athletic. Latterly urine increased in quantity; specific gravity, 1.012; acid; albumen, five per cent.; hyaline casts; round epithelium; leucocytes.

Examination of heart.—Apex fifth space, just inside mamillary line; reduplication of second sound over apex, with roughening preceding first sound. Heart rapid, regular, and feeble; difficult to determine positively nature of murmurs; weakness of heart action especially notable over right ventricle; sounds of heart heard with greatest distinctness over lower portion of sternum and at epigastric region. There is a very limited area of pulsation just inside of left nipple; none at epigastrium, and none over left intercostal spaces. Some pulsation visible at root of neck on both sides, and over sternum, when patient lies in dorsal decubitus; pulse, 96; regular.

December 5th.—℞. Caffein citrat., grs. v., t.i.d.

December 14th.—Albumen in urine, twenty per cent.; passed thirty ounces.

December 19th.—Albumen in urine, thirty-seven per cent.; passed thirty-six ounces.

December 27th.—Albumen in urine, six per cent.; passed twenty-eight ounces.

January 3d.—Albumen in urine, twenty per cent.; passed twenty-six ounces.

January 8th.—Patient died of acute pulmonary œdema.

Autopsy revealed both layers of pericardium adherent; mitral orifice somewhat contracted; cardiac cavities dilated; left ventricular wall thickened. Kidneys showed changes of chronic diffuse nephritis.

In marked heart-strain, and especially when there is a reasonable probability of the production of slight or moderate cardiac dilatation, the lower limbs are often œdematous. This œdema is always more marked toward the end of the day; in the morning it has almost as completely disappeared. In those cases in which the pulse is extremely rapid, feeble, and somewhat irregular, the heart also is very rapid and weak, palpitations excessive, and stomachal distress quite pronounced, and the cardiac strain appears to have affected directly the cardiac motor ganglia, or the sympathetic system more than the cardiac muscular fibre. While this statement is in part correct, there may also be present in such cases sufficient evidences of some enlargement of the heart, mainly due to dilatation of its cavities. This cardiac dilatation may be secondary to a condition of slight anterior hypertrophy, and may be produced by kidney disease, endarteritis, or as the result of valvular disease, "and it is impossible," according to Janeway, "to determine how far dilatation of the cavity, or degeneration of the muscular tissue, is predominant in the production of the ensuing phenomena."[2] I would say, in regard to this opinion, while often true, that at times our therapeutic means will enable us to clear up the situation, since in the case of pure dilatation decided amelioration will result from continuous judicious treatment, whereas this can scarcely be looked for if degeneration of the heart-muscle be present.

The case of W——, who was presented by me at a late meeting of this Society, admirably illustrates, in my belief, some of the preceding statements.[3]

In those cases in which the pulse-rate is remarkably slow, the pneumogastric trunks probably lack their proper supply of oxygenated blood, owing to heart weakness. In some of the most remarkable of those examples reported by Flint,[4] they were thought by him to bear evidence of morbid central disturbance associated therewith. Numerous cases in which idiopathic dilatation of the heart[5] had advanced to the degree of producing swollen legs, a rapid, feeble, irregular pulse, and all the physical signs of dilatation, have been so much ameliorated under treatment that all these symptoms passed away. In one case, reported by Fothergill, after four months' treatment with iron and digitalis, there was such complete cure that ten years later the patient had no feeling at all of weakness about the heart.

This stretching of the muscular tissue, with enlargement of the cardiac cavities, often follows conditions of passing debility, and may, under such circumstances, be recovered from completely.[6] It is wise, however, to note that the general condition may often be dependent on the feeble heart, rather than the reverse, which is, also, none the less true that the feeble heart is but a direct consequence of the adynamic state of the patient. A feature in the chronic affections of all our internal organs, which has long appeared to me one of extreme interest, is what may be termed the inherent vitality, or strength of each one, in different individuals. This strength can alone be properly estimated when it is submitted to certain tests. And while one person may bear these tests so well that apparently no evil results follow, another person, with an outward aspect of far greater vigor, will fail soon and utterly. This is one of those important facts that most trainers and all educated teachers of physical exercises for the healthy development of the body are becoming daily more familiar with. Owing to this knowledge we are less likely in the future to see among our young men, brought up in schools and colleges, the diseases which undoubtedly result from excesses of rowing, tennis, bicycling, running, and all outdoor sports or contests in which vigor of body and strength of limb are essential.[7] Some of these diseases, it must be recognized, give evidence of their presence by such signs as accurate physical diagnosis can generally discover and properly estimate. Alongside of such cases, however, there are a large number of others, I am convinced, in which no outward signs betray the tiring or exhaustion of the cardiac muscular fibre. It has been stated by some observers that when the heart-fibres are in a perfectly healthy condition they cannot be thus strained, either by physical or mental over-exertion.[8] Spillman maintains that "the heart wearies not. It is formed to beat. That is its rôle, its life. It beats sixty, seventy, and eighty years without wearying." According to such views the word "over-exertion" applied to the heart is not physiological.[9]

Such statements, in my judgment, cannot be supported by the close observation of cases which are daily seen in our hospital clinics. Certain rational symptoms, when duly weighed after the history of the patient is fully taken, and all pernicious modifying influences from diseases of adjacent organs have been fairly eliminated, are

[1] Vide Investigations into some Morbid Cardiac Conditions, pp. 34, 35. Edinburgh, 1886.
[2] Vide The Medical Record, June 19, 1886, p. 683.

[1] Vide The Medical Record, December 18, 1886, case of H. W——.
[2] American Practitioner, January, 1876.
[3] Fothergill: Heart Diseases, 1879. [4] Ziemssen's Supplement, p. 359.
[5] Vide vol. xviii. Ziemssen's Cyclopædia, p. 335, Article on Physical Exercise, by A. Brayton Ball, under heading Results of Over-Exertion.
[6] Sir Wm. Jenner, quoted by Allbutt and Schrötter, Ziemssen's Cyclopædia, vol. vi., p. 201, quoted by Ball.
[7] Vide The Medical Record, November, 20, 1886, p. 574, quoted from Leyden's article.

as surely diagnostic of heart-strain as the same symptoms are when accompanied by evident physical changes, or the physical alterations are without the rational symptoms. In this connection I would cite the following forcible and truthful statement from Delafield:[1] "In some of the cases the rhythm alone is disturbed; the patients have an irritable heart without any marked change in size. In other cases, in addition to the irritability, there are also dilatation and hypertrophy of one or both ventricles. . . . In still other cases, although the heart is enlarged, there is no change of rhythm, and it does not trouble the patient." After all, the heart is a working organ of which it may be truly said that the principal, all-important function is its ceaseless, intermittent activity. Now, then, are we not prone to-day to look merely, or at all events too much, at pathological results of disease which are visible to the eye, aided or not with lenses of high power? And yet these obvious pathological changes are not the *whole* disease—indeed, they are but the effects of it, and behind and beyond are the far more important etiological factors which have previously been at work, rapidly or slowly, in developing and consummating it.

If I have made myself clear in the foregoing description of those forms of heart-strain that I have personally observed many times, I have convinced you that all *physical* and *mental* over-exertion is quite capable of producing it. The amount of physical effort or mental fatigue, or both combined, essential to produce evident injurious effects must finally depend on *the individual* who may become the sufferer; and whether or not these are the *sole* efficient causes of heart-strain. Other causes may be present, which of themselves are sufficient to produce symptoms of heart-strain, and which, of course, when added to great physical and mental effort, act more speedily and disastrously. Such causes are previous existing cardiac affections of the valves and orifices, chlorosis and anæmia, fatty heart in corpulent persons, old age, pregnancy, convalescence from acute diseases of mild or grave character (Leyden). In the latter instance, particularly, we shall frequently note symptoms of heart-strain after physical or mental effort of very moderate amount. I have known, under these circumstances, attacks of fainting and vertigo to occur, accompanied by a feeling of heavy weight in the præcordial region. When the hand was applied on these occasions over the heart, scarcely could the beats be felt during some time, and subsequently, when palpitations appeared, even though unpleasant and occasionally painful, they were far less disturbing than the previous collapsed condition of the heart, which, according to the expression of such patients, seemed "dead like a stone." As an example of the manner in which mental fatigue and lack of proper hours of sleep influence the heart and produce rational symptoms of great functional distress, I would here refer to the students who sit up to the wee sma' hours of the morning. I have known a case in which, under like circumstances, at a given moment the heart would begin to beat irregularly and tumultuously, and concomitantly with these palpitations would also appear a sense of weight in the epigastric region and an uncomfortable feeling of oppression. All these symptoms would last after they appeared until the patient had fallen asleep. The following morning, on awakening, they had ordinarily disappeared.

Finally, there are cases in which no *sufficient* cause can be assigned, after the most careful examination and inquiries, to account for the apparent cardiac debility. In such instances, in the words of Dr. E. G. Janeway,[2] "it has seemed to the writer a necessity at times to make the diagnosis of weak heart, it being impossible to determine the essential cause of such weakness. This relates to those cases in which the symptoms of cardiac disease exist, but the heart is normal, or nearly so, in size; the sounds, unless carefully noted, seem normal, no murmur is present, and there is an absence in the history and age of the true, or satisfactory, explanation for this state. I am perfectly willing to admit that after acute disease we should expect myocarditis, with pyæmia, perhaps suppurative myocarditis; with rigid radials, etc., coronary endarteritis; in a person, particularly a female, who had been a hard drinker and had fatty liver, fatty degeneration; in marked anæmias, fatty degeneration, etc." Dr. Janeway reports a case of a man, forty years of age, who after running some distance had a fainting attack. Subsequently he had symptoms which were variously attributed to phthisis and disease of the kidneys, but which Dr. Janeway explained by a weakened heart. The patient died, and the autopsy showed an old thrombus of the left ventricle, which may have formed during the syncope, and myocarditis fibrosa of the left ventricular wall. At no time during life had a murmur been audible, and, therefore, the diagnosis could be only surmised previous to death, which, however, was apparently correctly done by Dr. Janeway. Such instances are of very great interest, as showing how much "the nature of the onset and the character of the symptoms" are to be estimated in arriving at a correct diagnosis in obscure forms of *weakened heart*. In some analogous cases, still the *cause* and *nature* of the weakened heart remain completely hidden, and indeed no adequate explanation can be given in regard to their presence. In this class, according to Delafield,[1] "the physical signs of dilatation were evident." Taken absolutely, I do not believe this statement to be wholly correct, for I am confident that there are some instances in which reasonable doubt must exist as to the existence of any enlargement of the cardiac cavities. In the following remarks of Dr. Delafield,[2] however, as will be appreciated from what precedes, I agree in regard, not "to most," but to some cases of weakened heart, viz., that "no cause at all for the cardiac lesion could be discovered; and in those cases in which there was a history of sudden exertion or mental emotion, or of change in the wall of the heart, these conditions do not seem at all adequate to explain the cardiac lesion."

How are these cases of heart-strain and heart-weakness to be treated?

Manifestly the first thing to be done is to discover the primary essential cause of these affections and, if possible, to remove it. If the physical labor or occasional efforts be too great, a stop must be put to an injurious occupation. Occasionally it is necessary to abandon all work for a time and take a complete rest. Of the rapidly beneficial effects of rest there can be no doubt. At first, and when the heart-strain has been but slight and is of fresh date, it may by itself be sufficient to rehabilitate these sufferers. In many cases, however, absolute repose is not essential. Abstention from work and moderate distraction, mental and physical, are what is most required. Sometimes change of scene will afford the greatest mental relief; and as the air is also changed at the same time as the occupation and surroundings, the good effects are, so to speak, doubled. In the beginning, light diet, frequently repeated, is found more useful than to attempt to overload these patients with food. Later on the most nutritious kinds of food, in relatively small quantities at any single time, are very desirable. Aids to digestion in the form of ignatia, bismuth, ingluvin, pepsin, hydrochloric acid, lacto-phosphate of lime, etc., are of moderate value. When these fail to produce good results and symptoms of intercurrent gastritis are present, I now rely to a great degree upon counter-irritation by means of fly-blisters, several times repeated, or the thermo-cautery (Paquelin's). In two instances which I recall, I had very satisfactory results from "lavage" of the stomach. The latter method has, of course, no direct effect upon the heart in the way of invigorating or regulating it, but it certainly relieved gastralgic and dyspeptic

[1] American Journal of the Medical Sciences, January, 1886, p. 98.
[2] The New York Medical Journal, June 19, 1888, p. 680.

[1] American Journal of the Medical Sciences, January, 1886, p. 104.
[2] Loc. cit., p. 103.

symptoms in a very marked degree—and thus by reflex action, and by helping to restore normal digestive power, cardiac systole was decidedly strengthened. The use of blisters and the thermo-cautery are, also, unquestionably, of very great and direct benefit to the gastric disturbance; and so far as the heart is concerned, I have likewise recognized their value frequently in stimulating its contractile power. While this is often true, it is not invariably correct, and occasionally one meets cases of heart-strain and cardiac debility in which blisters and the thermo-cautery remain without obvious beneficial effects upon the heart itself.

In these examples I have hitherto had the best results from the administration of tincture of the chloride of iron, in moderate and frequently repeated doses continued for weeks and months, while the liver was gently stimulated by tablet triturates of calomel, gr. $\frac{1}{4}$ to $\frac{1}{2}$, morning and evening, or oftener. The usual heart-tonics have sometimes proved inefficient; again, they have been evidently useful. I do not approve of the use of digitalis in these cases, except in very moderate doses, combined or not with the iron tincture. If too much digitalis be given, instead of helping the patient it does him harm.

On several occasions, when digitalis has proved to be useless or injurious, I have had very excellent results from caffeine or convallaria. Certainly, the latter drug is more easily tolerated by a sensitive stomach than digitalis is; and whenever the nervous supply of the heart is especially implicated, I believe that I secure more quieting effects from its employment. Among well-known cardiac tonics and stimulants for obtaining temporary good effects, at least, I know of no drug quite equal to coca. Given in the form of wine or fluid extract, it does much at times to restore the heart-muscle to its former tone.[1] Of course, the good effects of any and all treatment will be closely allied with the stage of the disease when it first comes under observation. If the heart-muscle be healthy, with the exception of more or less loss of tonicity or contractile power, its complete integrity may be restored. If, on the contrary, the heart-fibres are already considerably stretched and the cavities dilated, while in some instances the patient may be restored to apparent health for a shorter or longer period, the probabilities are that ultimately renewed distress will be felt and further progress in the disease will take place.

Whenever accompanying the condition of heart-dilatation, be it only very moderate in amount, fatty degeneration has already begun, the outlook is most serious. Even then these individuals may live a number of years, provided no great call be made upon the heart-force. But if efforts, mental or physical, be continued, or if an acute bronchitis become developed through over-fatigue and exposure, such cases often terminate fatally and in a very brief lapse of time. Perhaps a few days or weeks may bring on the fatal ending. In the instances which I have studied I have not felt obliged, except in rare instances, to give narcotics to allay temporarily great pain or dyspnœa. Certainly, in the first stages of heart-strain, when they are less likely to do harm, they are rarely required. Later on, in the midst of a complicating acute attack in the lungs or kidneys, I am very loath to employ anodynes, except in very small doses and at relatively long intervals. I owe this reluctance, doubtless, to the fact that, despite theories to the contrary, and the matured observations of skilled clinicians, I have known great harm to result in my own practice from what I now regard as a *very unsafe* use, especially of opiates. There are times, of course, when a small hypodermic of morphine, combined or not with atropine, will be wonderfully beneficial to the victims of heart-strain or heart-weakness. The cases that I have seen in which these admirable effects were produced were those where there was no complicating acute disorder of another important and closely connected organ, and they were those, also, where the suffering had been occasioned by relatively extreme effort producing a fresh outbreak of symptoms, which were the proof of acute grafted on old cardiac changes.

Under these circumstances, indeed, the introduction of morphine under the skin has often given temporary quiet to the dilated, laboring, and overburdened heart when nothing else could. The safety-line, however, is very narrow; and while one-eighth, one-sixth, or even one-fourth grain of morphine hypodermatically may frequently be of immense service in restoring rhythm and force to rapidly failing heart-beats, a larger quantity will be likely to occasion rapid collapse and death.

From the foregoing study it may be reasonably inferred:

1. There is a class of cardiac disease to which the names of "heart-strain," "heart over-strain," or "weak heart" may be properly given at the present time, and until this class has been more carefully subdivided.

2. In this class are now included cases in which there are no marked physical changes, and in which the symptoms alone indicate cardiac weakness.

3. In many cases the physical cardiac changes are more or less marked, and usually show some dilatation, joined or not with slight or moderate thickening of the ventricular walls, and accompanied or not with mitral or aortic incompetency.

4. There are cases in which the heart is obviously somewhat enlarged, although there never have been any morbid symptoms which showed cardiac weakness.

5. The causes of these affections are numerous; among them, however, prolonged or excessive physical exertion is often, although not always, prominent.

6. In some cases the disorder seems to be one more of neurosal than muscular deficiency, and may affect the function of the pneumogastric nerves, the sympathetic or the intracardiac ganglia.

7. In several instances the causes of cardiac disorder are very obscure or wholly unknown; and in such instances we must admit the existence of a *weak heart* primarily, that is sometimes first recognized suddenly and without premonitory indications which shall enable us to foretell such condition of cardiac debility.

8. Absolute or relative repose, appropriate diet, change of scene, chalybeates, cardiac tonics, counter-irritation, etc., employed judiciously, will do much in most cases to restore real or apparent cardiac vigor for a shorter or longer period.

What is Conservative Surgical Practice Regarding Gunshot Wounds of the Abdomen?—A correspondent in Georgia writes us: "Will you please decide a question, of dispute through your valuable columns, between another physician and myself? The question is this: 'What is the most conservative surgery of the present day in gunshot wounds penetrating the abdominal cavity—especially a pistol-ball?' He contends that the surgeon would be justified in performing laparotomy and searching for the wounded intestines, closing the wounds by the glove-stitch with catgut ligatures. I contend that the above is not as conservative as to treat with perfect rest and arrest peristaltic action with opium; for we don't know how many intestines are wounded, or how many times the same intestine has been perforated by the ball, and by handling the intestines so much, as would necessarily occur in search of the wounded ones, might be set up violent peritonitis, and possibly enteritis, which would cause the patient to sink." To this we answer that the conservative surgical practice for the general practitioner who had had no training in peritoneal surgery would be that of letting the thing alone. If he had some special experience, opinion now tends to support the operation of laparotomy. When done properly, the handling and exposure of the intestines does not cause peritonitis.

[1] I have obtained the best effects from the use of Mariani's wine. From personal information given me by this reliable pharmacist, these results are attributable to the excellent quality of the coca-leaves and of the wine which he uses in its manufacture.

SUCCESSFUL PRIMARY LAPAROTOMY FOR RUPTURED TUBAL PREGNANCY.[1]

By A. W. JOHNSTONE, A.M., M.D.,
DANVILLE, KY.

MR. PRESIDENT AND GENTLEMEN: On the 8th of last October, with Drs. Kinnaird and Huffman, of Lancaster, I saw a former patient of mine whose perineum I had restored about eighteen months before. Her age is thirty-two, and her family consists of one child, eight years old, after whose birth she had a protracted convalescence with the most intractable pain in the left side. I had been telegraphed for on the 6th, but as I was out of the State did not see her until two days after, when I found her in good condition and expressing herself as having recovered almost completely from the attack for which I was called.

It had consisted of a sharp, sudden pain, while stooping, in the left inguinal region, which, as she expressed it, "felt like something had torn loose." From the account that her physicians gave, the pain was followed by a considerable amount of shock, from which, however, she had entirely recovered, leaving little or no trace in the shape of constitutional disturbance. She was still somewhat tender in the left iliac fossa, and by conjoined touch I I found a mass high up to the left of the uterus, about the size of an orange, which was exquisitely sensitive and obscurely fluctuating. The uterus was pushed slightly to the right, enlarged about one-third, but much firmer than the ordinary pregnant organ. She said that she thought herself about two months gone in pregnancy, but that before the attack for which we met, she had not felt an ache or a pain.

The consultation resulted in our suggesting a laparotomy for an extra-uterine pregnancy; but as we could not be absolutely positive that it was not a cyst, or some encysted hemorrhagic or inflammatory product, it was declined, and we started off on the usual expectant plan of hot injections, fomentations, morphine when necessary, etc. Under this managemnt she did well, and when, somewhere about the 15th or 20th of October, she passed some membranous stuff from the uterus, they began to congratulate themselves that it was only an abortion after all. She had been sitting up for some days, when, on October 27th, the same symptoms returned in force, and being from home again, I did not see her until the 29th. By that time she had again rallied, but there was still a little constitutional disturbance, and the peritoneal tenderness had become general. The mass to the left of the uterus had decidedly increased, but laparotomy was again declined. About four days afterward I dropped in and found her with a clearly defined peritonitis, and as there was still great opposition to operation we decided not to wait longer than one week more before we said positively that the exploration must be made.

On the morning of November 6th, however, the most violent attack that she had yet had set in. When I reached her, at 9 A.M., I found a pulse of 130, temperature 99, but so much pain that she was constantly calling for chloroform, as morphine seemed to have lost its effect. At once we made preparations for laparotomy, and by 11 A.M., with Dr. W. Huffman giving the anæsthetic, and Dr. J. B. Kinnaird assisting, I made a two-and-a-half-inch opening at the usual point for exploring the pelvis, and found that in spite of the adhesive peritonitis the extravasated blood had worked its way pretty generally through the peritoneal cavity. After separating adhesions and getting into the cavity of the mass to the left of the uterus, I found a three months' fœtus lying in a much thickened and ruptured tube. To strip out this torn and bleeding duct from its bed of false and true attachments, ligating what seemed necessary, was the work of only a few minutes. To turn out the clots, wash the peritoneum, and pack it with sponges, took as many more. But on seeing the depression so great I did not deem it safe to prolong the operation to the removal of the appendages of the other side, as had been my first intention. So the stitches were put in, the sponges removed, glass tube applied, wound closed, and patient put to bed in profound shock.

No one who has not tried it can tell with what twinges of conscience I watched that flickering pulse and cold, clammy skin, knowing all the time that had I "taken the bull by the horns" a month sooner all that suffering and frightful hemorrhage would have been saved, and that instead of waiting until 2 A.M. for the first attempt at reaction, it would have come at once.

With the literature of the day teeming with the after-histories of successful laparotomies, need I say anything more about this one than that, with the exception of a somewhat protracted drainage, it is an exact repetition of all the rest. It is only necessary to say that after a tedious convalescence she is now out of bed and gaining strength.

But the one idea it has brought home to me is that I waited too long. For had I followed my judgment and forced the operation when I first saw her, instead of "a scrape through," it would have been a prompt recovery. She would have been saved a month of physical suffering, and I an equal period of regret.

While I believe it to be the first successful primary laparotomy for ruptured Fallopian pregnancy on this side of the Atlantic, still it is nothing but the extension of the work of my old master, Lawson Tait. Do not understand me to say, though, that he would have countenanced the long delay before the operation, for the one great lesson which he has taught the world can be summed up in the single word, promptness. I am sure had she been with us last year instead of watching the successive giving way of the different layers of the tube and discharge of the decidua, that the mass would have been enucleated within the first twenty-four hours, and possibly the necessity of the drainage-tube done away with. This at once almost answers the question, What would I do with extra-uterine pregnancies in general?

Four papers, in the *British Medical Journal* for December 4, 1886, place the various methods side by side, as advocated before the British Medical Association, at its last meeting, by the most earnest champions of each.

I am sure that any unbiassed judge, after reading the whole discussion, cannot help but say that the most rational means of all is to make a clean sweep of the whole thing. What could be more horrible than the condition of the poor creatures that you there see described, who, after having the growth arrested by electricity in some form, or been lucky enough not to die from bleeding before term is reached, still have to go through the terrible ordeal of getting rid of the remains by ulceration. So, without going further into the discussion, I say, most unhesitatingly, that, whether ruptured or not, we should remove it by laparatomy as soon as found. This case of mine, as you see by her previous history, is no exception to the general rule, that Fallopian pregnancies are always sequelæ to some antecedent pelvic trouble. In a conjoint debate before the British Gynecological Society, at its meeting on the 23d of last June, on a paper by Mr. Bland Sutton, on "Menstruation in Monkeys," and one by myself on the "Menstrual Organ," I think we brought out the real explanation of the accident. What I then said on this point was as follows:

"There were two points especially in which I thought we could help each other. I was sure that Mr. Sutton's proving that the epithelium of the tubes is not lost during menstruation was a help to me in understanding Fallopian pregnancies.

"Ercolani had proved that the first uterine change after the fertilization of the ovum was a destruction of the epi-

[1] Read before the Central Kentucky Medical Association, January 19, 1887.

thelium, thus laying bare the adenoid tissue for the formation of the placenta; and I thought that the menstrual denudation was the explanation of the frequency of pregnancy directly after menstruation, and that the fact just shown by Mr. Sutton went in the same line—that is, that under all normal conditions the epithelial lining of the tube protected the adenoid layer from the passing ovum, which was thus forced to enter the uterus before finding a fit place of attachment. But when, from any cause, the adenoid layer is exposed, the ovum is given an opportunity to adhere, and a tubal pregnancy is the result. Thus, the idea that extra-uterine pregnancies are always the result of some preceding pathological change, is given new force." But for the ideas then expressed by Aveling, Tait, and others, I refer you to page 301 of the November number of the *British Gynecological Journal.*

Since that meeting I have seen a good deal of tubal disease, both clinically and pathologically, and it all goes to strengthen the belief that a desquamative salpingitis is at all times an antecedent of extra-uterine pregnancy, and that an impassable stricture is not a necessary factor. While watching the convalescence of this case, I thought, combined with one of tubercular peritonitis (in which there was a doubt before operation as to what the mass of intestines that were bound to the back of the cavity was), I had good material for illustrating the life-saving power of exploratory excision. Had I then had the six-foot intussusception (which behaved so much like an abscess of the pancreas until the operation, ten days ago), I would have been ready to defy a whole America full of sceptics.

But Professor Thomas, by his recent paper before one of the New York societies, has taken the wind out of my sails, and broken the back of the opposition. For as long as Twenty-third Street held firm, and New York laid down the vagina as the only route for relief, the average medical mind was kept as religiously shut as the peritoneum used to be. With this black cap of ignorance hundreds of our American sufferers were let sink into their untimely graves, or, still worse, into the horrors of utter despair. Now, however, it is different, and he who fails to learn anew this lesson of the abdomen is his own executioner. I agree with Professor Thomas fully in his conclusion that the fingers that enter this incision should be guided by a trained brain; and I am glad to say, by the facilities which our country now gives, such an one is at the disposal of almost all patients, no matter how remote. But I must demur to putting in the whole hand; for a brain that cannot find out with two fingers what is the matter ought not, in my opinion, to be allowed to direct any sort of an operation. One of the great secrets of success in abdominal surgery is knowing where to stop; and when you make the opening large enough to admit the hand, the Rubicon ought to be already crossed, and your mind firmly made up to complete. If you do not intend to finish, your aim should be to do as little damage as possible.

Now for my claim to American priority, and I am through. It is based principally on two letters. One of them was from Dr. J. E. Janvrin, of New York, to Dr. J. T. Johnson, of Washington, D. C. As I had been out of the country for some time I had not kept up with the home literature of the subject; so when I was ready to write up this case I wrote to my friend, Dr. J. T. Johnson, for American references; and he, in turn, kindly wrote to Dr. Janvrin, as being the best posted man on the subject, and with the permission of both I read you his reply:

"191 MADISON AVENUE, NEW YORK,
November 24, 1886.

"MY DEAR DOCTOR: In reply to your note of the 22d, I would say that when I prepared my paper on tubal pregnancy, in August, I was not able to find any recorded cases of the *primary* operation for ruptured Fallopian pregnancy *in this country.* I have not heard of any since that date (except this case of Dr. Johnstone's). I mentioned in that paper the twenty-three cases reported by Tait, and took the ground that if the diagnosis was well made out, the primary operation for the removal of the fœtus and ruptured tube ought to be done. If any cases have been done, and have also been reported, they can be found in the "Index Catalogue" at the Surgeon-General's office. I have spoken to several of our gynecologists since receiving your letter, but have been unable to obtain any information from them. Perhaps it would be well for you to forward this little note to Dr. Johnstone. Very likely his case will prove to be the first operative case (primary) in this country.

"Very truly yours,
"J. E. JANVRIN."

The other letter is from Surgeon John S. Billings, of the Surgeon-General's office, in reply to one from myself. He says: "I have not yet arranged my references to 'extra-uterine pregnancy,' so as to be able to definitely answer your question. I enclose herewith, however, references to three cases of the kind you refer to, which may be of some interest." Of these only one was a primary operation for rupture, by C. K. Briddon, published in the *Philadelphia Medical News*, 1883, xliii., pp. 666–668. The case died in forty-seven hours, of shock.

Thus it will be seen that no authentic case of recovery had been recorded up to last August. Since then I can hear of but one other case that has any claim to consideration, and I heartily wish that that had no flaws at which the conservatives could carp, for it was done by my companion and associate, Dr. Jos. Price, of Philadelphia, somewhere about the first of last October. Had he found a fœtus, or had there been no doubt about the tube containing a placenta, instead of a hemorrhage, as some who saw it claimed, Tait would have been vindicated one month sooner, and Price and I would have had an earlier jubilee.

There is nothing that I more heartily dislike than a priority contest, and had it not been for the way in which our teacher has been misunderstood, as well as abused, neither Price nor I would care much about it. But knowing full well that all his disparagement, which has even reached this Society, is merely the dying clamor of his distanced rivals, all his pupils are anxious to give "the new world" an object-lesson from his teaching. And were he here, I am sure Price would be the first to applaud these specimens, and the most positive of all in his agreement with me that Lawson Tait is not only all that his published work would have you think, but for all time he will be proved to be the greatest benefactor that the age has yet produced.

THE MEDICAL BOARD OF THE FRENCH HOSPITAL has recently been organized and the following appointments have been made: Ward service, Drs. J. J. Henna, Menierre, F. A. Lyons, and C. D. Scudder; Dispensary service, Drs. P. Rengifo, E. F. Tucker, and J. E. Newcomb.

THE TREATMENT OF DIARRHŒAL DISEASES.—Dr. M. S. Leslie, of Greenup, Ky., is not disposed to regard the antiseptic treatment of diarrhœal affections with as much favor as were the speakers in a recent discussion at the Academy of Medicine. He writes: "While I do not question the value of antiseptic agents in the treatment of these affections, I do question that they are as all-sufficient as the speakers at this meeting seemed to regard them. For a long time I have regarded opiates as very unsatisfactory remedies in the treatment of this malady. But for the past year I have extensively used bromide of potassium with the happiest results, and I have come to regard this salt as the remedy *par excellence* in diarrhœal conditions. The antiseptic bromine element of this medicine may be entitled to some credit for the benefit resulting from its use, but to the sedative properties of the salt is mainly due its curative effects in the therapy of diarrhœal diseases."

Clinical Department.

A RARE CASE OF FRACTURE.

Dr. E. S. Willard, of Fairfield, N. Y., reports the following case: "On the evening of September 15, 1884, I was called to see G—— S——, lying on the roadside intoxicated. He had fallen from and been run over by his loaded wagon. When found, his left ear was nearly severed from the head, numerous bruises and abrasions occurred, the right humerus was broken between the upper and middle third, and *both* clavicles were broken about the middle third. He was removed to his home, several miles distant, and, with the assistance of his family physician, I dressed his wounds and left him, not seeing him again till January following, when he called to see me. Upon questioning I ascertained that union had taken place at all points of fracture, and that he was nearly as sound as ever. He must have been about sixty years of age."

CONVULSIONS FROM IMPACTED FÆCES IN A YOUNG CHILD.

Dr. G. W. Squires, of East Avon, N. Y., writes: "On the 15th I was hastily summoned to see a little girl eleven months old who, the messenger said, was dying in a fit. On my arrival I found the child just recovered from a convulsion, but there was twitching of the muscles and every indication of more convulsions. The thumbs were flexed in the palms, the eyes were wild and squinting. Upon examination I found the abdomen greatly distended, with hard, knotty-looking lumps, which were readily recognized as being in the bowels. The mother made the remark that the child had been 'terribly constipated;' that she had given her as much as three teaspoonfuls of castor-oil without a movement of the bowels; that she had been in the habit of feeding her on potatoes, cabbage, bread, and in fact everything she ate herself. Every few minutes the child would cry out, and bend almost double. I at once ordered injection of warm water and castile soap, and in ten minutes the bowels moved, bringing away a great quantity of hardened scybala the size of hickory nuts; the child immediately felt relieved, and soon went to sleep. At the end of an hour she started up with another violent griping pain. Another injection was immediately given, bringing away more fæces covered with mucus; a few grains of comp. licorice powder was given, and the injections were repeated seven times, each time bringing away less hardened dejections, until the last was of quite natural consistency. The fever-thirst and convulsive symptoms disappeared as if by magic, the child asked for playthings, and was more bright and cheerful than it had been for weeks. The mother told me that the night before the convulsion the child had a severe attack of croup, which was undoubtedly of reflex origin."

TEDIOUS LABOR FROM LARGE SIZE OF THE FŒTUS.

Dr. J. M. Perkins, of Grove Springs, Mo., reports the following case: "I was called on January 7th to see Mrs. J. J. R——, and found her in labor. On examination the parts were seen to be well relaxed. The os was dilated about three or four inches in diameter; the edges seemed very soft and flabby. The pains were regular, but not of sufficient strength to deliver the fœtus. The fœtus presented by the left occipital position. I waited two hours for the pains to increase sufficiently to effect the delivery of the fœtus, but they became no stronger. I then gave the patient one drachm of fluid extract of ergot, and waited until it began to act. I then ruptured the membranes, and let out the liquor amnii, after which the pains began to increase in vigor and come on every five minutes. Everything moved on all right for about one hour and twenty minutes, when the fœtus was born. The cord was around its neck, and about half-way from placenta to fœtus it was tied in a knot like a figure of eight. The child was a very large boy, weighing fourteen pounds. The head measured, in circumference, seventeen inches around occipito-frontal diameter, and was nine inches from ear to ear, over the top of the head. Who can show a larger boy than that from a mother weighing only one hundred and thirty pounds?"

SUPRA-CORACOID DISLOCATION OF THE HUMERUS.

Dr. F. B. Streeter, of Glenn's Falls, N. Y., reports the following case, seen by him in consultation with Dr. R. J. Eddy. The patient, a gentleman of middle age, fell down the stairs in his barn, striking upon his left elbow. The coracoid process was evidently fractured, and the articular head of the humerus was plainly felt above the clavicle, the patient being very thin and spare in person. At the present time he is making good progress toward recovery.

FRACTURE OF THE INTERNAL EPICONDYLE TREATED WITHOUT SPLINTS.

Dr. S. M. Stocker, of Duluth, Minn., writes: "In an article on 'Fractures of the Upper Extremity' which appeared in The Medical Record, December 19, 1885, Dr. Samuel W. Smith recorded a fracture of the internal epicondyle treated without a splint, and with perfect motion of the joint as a final result. I have a similar case to report. I was called Saturday, October 16, 1886, to see Emil N——, a boy twelve years of age, who had fallen to the floor, a distance of two and a half or three feet, while climbing through an open window. I found him in bed, with his left arm resting on a pillow. There was considerable swelling about the internal condyle, but all the motions of the joint were present, though more or less painful. The point of the condyle could be felt three-fourths of an inch lower than normal, and being grasped between thumb and forefinger could be freely moved in an antero-posterior direction. It could be carried upward far enough to give distinct crepitus, but not exactly into place. I carried it upward as far as possible, and endeavored to hold it with compresses and a bandage. Sunday morning, finding everything snug, I did not disturb the dressing. I gave a guarded prognosis, and explaining the necessity of careful watching, I directed the boy's mother to send him to my office Monday afternoon for inspection and renewal of dressing, if necessary. The boy failed to appear, and on the following Friday I visited his mother, who informed me that his arm was not broken, that he could move and use it, and that he was in school. I directed her to send him to me Saturday, one week from the date of injury, for inspection. The dressing I had put on the arm was still there, but was becoming loose. I had left the forearm midway between extreme flexion and extension. Flexion could not be made from this position, but extension could be made through an arc of fifteen or twenty degrees. The point of bone was where I had left it, and could not be moved by a moderate amount of force. On Sunday, the ninth day, I began passive motion, and made it every day until November 21st, when it was discontinued, as all the motions were perfect and painless. The boy was seen at my office during the treatment by various practitioners of Duluth. He was also exhibited at the November meeting of the St. Louis County Medical Society. The gap could be plainly felt, and the diagnosis was confirmed by all who examined him."

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SOME OF THE LESS COMMON USES OF ANTIPYRINE.

IT is unfortunate that many of the more recently introduced drugs, especially the newly discovered antipyretics, should have received names expressive of only one of their applications, for such a nomenclature is misleading and tends to cause other valuable properties of the drug to be overlooked. This remark applies with special force to antipyrine, which has many uses other than as a reducer of abnormally high temperature, but which, on account of its unfortunate name, is regarded and employed by a majority of the profession as an antipyretic pure and simple. We propose briefly to indicate a few of these other less known therapeutic applications of the remedy.

As pointed out in THE MEDICAL RECORD of September 11, 1886, by Dr. John Blake White, antipyrine possesses a remarkable power in controlling headache from whatever cause arising. The writer found that it relieved this symptom when due to indigestion, loss of sleep, menstrual disturbance, or mental fatigue, and that it was efficacious in uræmic headache and in recurrent attacks of cranial neuralgia. It also acted as a prophylactic in sick headache. This observation of Dr. White received independent confirmation nearly at the same time from a German source. Dr. Ungar, writing in the *Centralblatt für klinische Medicin*, of November 6, 1886, states that he has obtained excellent results with the drug in the treatment of hemicrania. When given at the beginning of an attack, or during the prodromal stage, it usually cut short the affection or so modified its intensity that the patients were able to attend to their ordinary affairs with little inconvenience. In a few cases, he states, antipyrine failed to exert any noticeable effect, and occasionally, even in the same individual, relief would be obtained in one attack and not in a subsequent one. The usual dose employed was fifteen grains.

Antipyrine has also been recommended very highly as a dressing to indolent ulcers. Dr. Bosse (*Berliner Klinische Wochenschrift*) has used it for this purpose, and says that it acts as an excellent stimulant and promotes granulation. The surface of the ulcer is covered with the drug in powder, over this is placed a layer of salicylated cotton, and the whole is retained in place by a tight bandage. The remedy is used only as a stimulant, and after granulation has become well established it is replaced by iodoform.

Another use to which this drug has been applied is as a hæmostatic. Dr. Casati uses it in five per cent. solution externally, and also finds it of value when given internally. Dr. Lavrand has found good results from the administration of antipyrine in epistaxis. The remedy, he says, is certain and prompt in its effects, and much superior as a hæmostatic to the perchloride of iron, and he has succeeded by its use in controlling a nosebleed which had persisted in spite of plugging of the anterior and posterior nares. It is employed for this purpose in a three per cent. solution applied on lint and introduced as far as possible into the nasal cavity.

Some observers have also noted a slight hypnotic action of antipyrine. This effect is not marked, but is still fairly constant. It has been noticed especially in cases in which the drug was given for the relief of headache, and possibly it was simply the result of the cessation of the pain.

These are some of the observations which have been reported of the less common applications of antipyrine, and they will suffice to show that the reduction of temperature is not the only therapeutic effect which can be obtained by means of this valuable drug.

A NEW CHOLERA FUNGUS.

A REPORT of the Commission upon Cholera which was despatched to Spain last year by the conjoined action of the Royal Society, the University of Cambridge, and the Association for the Promotion of Scientific Research, has appeared in the proceedings of the first-named body (*The Lancet*). The commission consisted of Drs. Roy, Graham Brown, and Sherrington, and the report, although "preliminary," contains matter of much importance and interest. Twenty-five typical cases of cholera were examined, either immediately or at a short interval after death, with the result that Koch's comma bacillus was not discovered in the intestinal canal in all the cases. In some this microbe was present in great abundance; in others it was far less conspicuous; while in many undoubted cases, where death occurred before the reaction stage set in, it could not be detected at all. These observations were confirmed by the results of plate cultivations in gelatine and agar-agar. Moreover, it was found that when present the comma bacilli were collected either on the surface of the mucosa or so close to it as to suggest a penetration of the epithelium after death, but in the majority the organism could not be found in the mucous membrane or in any of the tissues or organs. These results, which are directly opposed to Koch's, are considered to be conclusive against the bacillus having a pathogenetic relation to the disease; but it is suggested to be the cause of the premonitory diarrhœa, which is held not to be a mild attack of Asiatic cholera, but only a predisposing condition. Having thus satisfied themselves that the comma bacillus is not the cause of cholera, these investigators similarly dismiss the claims of Emmerich's straight bacillus to that distinction, and also state that they were unable to recognize Klein's straight bacillus in any of their preparations.

After much research another fungus was discovered,

which is believed to be pathogenetic. It consists of granular masses and a delicate mycelium, which could not be stained without difficulty, and was pronounced by Messrs. Vine and Gardiner to belong to the Chytridiaceæ, a class which includes many rapidly growing and virulent parasites of vegetables. The difficulties of its detection may have led to its being overlooked by former observers; while the objection of possible after-contamination is met and refuted. At the same time, it is stated that further investigation is needed, especially in the cultivation of the fungus, before the discovery can be held to be conclusive.

It is, we venture to say, highly improbable that the researches above described will have much weight against the long-continued and careful observations of a trained mycologist like Koch.

REFORMING THE PATHOLOGICAL DEPARTMENT OF THE NEW YORK STATE INSANE ASYLUM AT UTICA.

We are very glad to learn that a serious effort is being made toward the improvement of the scientific work at the Utica Asylum. The late Dr. Gray secured a considerable amount of money for the purpose of equipping a laboratory, and an annual appropriation was made for an imported pathologist to work in it. It has been, however, a case of *parturiunt montes, nascitur ridiculus mus*. We look in vain through the literature of psychological medicine to find any contributions from this Utica laboratory that have attracted notice or even won respectful attention. There are many persons who have accomplished more individually, in the midst of hard professional work, than has been done at the institution in question.

We sincerely trust, however, that the appropriations will be continued, for there is abundant opportunity to use the money profitably and to the credit of the State.

We but express the medical sentiment of the State, however, in saying that some radical change in the management should be made.

MORE ABOUT SPECIALISTS.

The latest contribution to the ethics of specialism is an article by Dr. Morris H. Henry in the last issue of the *North American Review*. The author alludes to articles published by Dr. Morell Mackenzie and Dr. Donkin in the *Fortnightly Review*, and which have been spoken of in these columns. Dr. Henry's view is that of the great majority of physicians. He condemns as hasty and inconclusive many of the conclusions drawn on the subject of specialism in America by Dr. Mackenzie while on his recent visit to this country. His advice is to anyone who may wish to consult a specialist, to talk first with his own family physician, and to follow his advice as to whom to apply. He recognizes that the best preparation for special work is general work. The latter teaches best of all those broad principles which must govern all investigations, and gives the proper instruction in regard to general scientific methods.

Dr. Henry maintains that only those men are entitled to be called specialists, in the true sense of the term, who have laid a foundation by, at least, ten years of general practice, and who have eliminated from their practice all but a certain class of cases, in which they find themselves especially interested, and in the handling of which they have acquired a special tact. The relation of any and every part of the human body to the organic whole is so subtile that one must understand the whole in order thoroughly to understand a part.

Many of our alleged specialists are far from confining themselves to the distinctive fields suggested by their class names. The same tendency is observed in many of our institutions for the treatment of special maladies. In a recent annual report of one of these institutions, there were reported under the head of "diseases of the throat and nose" fifteen cases of acute bronchitis. Doubtless their treatment was right and proper, but we fail to see why they should have been placed in this category. In regard to the treatment of bronchitis, it might be safely assumed that the average physician, though a general practitioner, would not err therein.

We shall have specialists as long as the world lasts. They have secured a position from which they cannot be dislodged. To them is due the increase in positive knowledge in many departments of medical research. Specialists, however, are, contrary to what obtains in the case of poets, made and not born. This making can result only from general experience, and the subsequent narrowing of one's field of work.

RECENT ADVANCES IN ELECTRO-THERAPEUTICS.

Dr. Paul Möbius has collected and reviewed two hundred and six contributions which have been made to electro-therapeutics during the past five years (*Schmidt's Jahrbücher*, 1887, No. 1). Many of these bear chiefly upon electro-physiology, electro-diagnosis, and technique, but a good share are devoted to the showing, by those whom Möbius calls "happy therapeutists," of the beneficent results of the electrical force upon morbid processes.

The unbiassed student of electro-therapeutical work cannot fail to share somewhat the pessimism of the German reviewer, who says, in effect, that no certain progress has been made in our knowledge of how electricity acts in disease, or whether it acts at all. This may perhaps, or rather may certainly, be said, that electric currents have a pain-allaying power, and do relieve a number of neuralgic pains. But as to paralysis we are still in the dark. We know that after the motor paths are broken in brain, or cord, or periphery, there is a process of reparation which follows naturally by certain laws. But do electrical currents influence this process of repair at all? Of this there is as yet absolutely no demonstrative evidence. Some cases seem to begin their improvement with the beginning of electrical treatment; others seem to cease their downward progress under it. But these effects are not uniform, perhaps not even the rule. There is no doubt that paralytics are often bettered by electricity, simply through virtue of its mechanical effects, just as they are bettered by massage and muscle-beating; and there cannot be any doubt of the value of electricity as a mechanical tonic, so to speak. But this is admitting that it has no specific effect whatever. In many functional disorders this mechanical effect comes into play, while in all diseases the psychical element

is most important. It is perhaps through the psyche that electricity acts in a majority of cases. If so, this is no argument against the use of electricity, since the wise physician always utilizes the potent influence of mind in promoting recovery from disease.

There have been brought out some special applications of electricity, some of which still remain to be positively shown are advantageous and effective. One of these is the use of the constant current in urethral and other strictures. Another is the use of galvanism in extra-uterine fœtation, and the passage of very strong currents through fibroids by means of specially adapted electrodes in order to produce their absorption (Apostoli's method). Stein, of Frankfort, has become an apostle of general electrification for the cure of innumerable diseases; while most remarkable of all are the claims of Müller for the use of very weak currents frequently repeated and applied over the seat of the disease. *Leve, breve, sæpe in loco morbi*, is his motto, prefaced to a book in which he announces the cure of such disorders as pseudo-muscular hypertrophy, transverse myelitis, locomotor ataxia, etc. He, with Neftel, Stein, Clemens, Apostoli, must be placed in the category of "happy therapeutists" whose large promises, perhaps, have the value of stimulating hope and energy in their own patients and too credulous practitioners.

A QUESTION OF PRIORITY IN RAPID DIVULSION OF THE VOCAL CORDS.

It has been our pleasant duty from time to time to correct in these columns the misapprehensions of some of our transatlantic brethren concerning the originality of certain methods of diagnosis or therapeutic measures which they have brought forward with the claim of priority. We have shown in several instances that these methods, however original they may have been with the authors, as far as they themselves were aware, were not new in this country, and that to American physicians was due the credit of priority in their invention and execution. We are now again called upon to dispute the claims of an Italian physician to priority as regards the operation of rapid divulsion of the vocal cords for the relief of laryngostenosis.

In a communication presented at a meeting of a provincial branch of the National (Italian) Association of Communal Physicians, held in Faenza, Dr. Peruzzi related the following case (*Il Raccoglitore Medico*, December 10, 1886): The patient was a man, thirty-four years of age, who had acquired syphilis some time previously, and for the past seven or eight months had noticed a gradual weakening of the voice, difficulty in breathing, and pain in the throat. Laryngoscopic examination showed the vocal cords united along almost their entire extent, and moving scarcely at all in attempts at phonation. The pharynx was red and covered with granulations. The diagnosis was made of laryngeal stenosis with sclerosis of the vocal cords, following upon syphilitic ulceration.

The patient was put upon antisyphilitic treatment, but the suffocative attacks became so threatening that it was determined to operate. On the morning of October 22, 1886, laryngotomy was performed by Dr. Loreta. Then a dilator, such as is used in cystotomy, was passed into the wound and through the small aperture remaining between the vocal cords. The blades of the dilator were then separated in the direction of the cords, and the latter were thus torn apart. Finally a tracheotomy tube was inserted. Three days later the cannula was removed, and a rubber catheter passed through the rima glottidis, and this was repeated every subsequent day, a larger tube being used each time. On the twelfth day the tracheotomy tube was permanently removed, and the patient soon recovered his normal voice and was definitely cured of the stenosis.

The author of the paper emphasized the originality of the operation, and stated that he had never read of any recorded instance of instantaneous dilatation or divulsion of the vocal cords, nor had he been able to learn from those acquainted with the literature of the subject that such an operation had been performed. The importance of the operation as a means of cure was also dwelt upon, since, in addition to the great saving of time, the ultimate results should be better if, as was held by many, a rapid stretching of fibrous tissue induced fatty degeneration and a consequent loss of retractile tendency.

We confess we are hardly prepared to admit the claims to originality in this operation, although we do not doubt that the writer was correct in his assertion that he could find no recorded case of instantaneous divulsion of the vocal cords. Most of the text-books on laryngology merely refer to rapid divulsion, but give no directions for its performance, and the instruments of Mackenzie and Navratil have been used chiefly in conjunction with the passage of catheters to hasten somewhat the progress of gradual dilatation. Yet they could be employed for the purpose of effecting instantaneous separation of the adherent cords, and doubtless have been so used.

But the identical operation of rapid divulsion has been performed by Dr. Joseph O'Dwyer, of this city, and was reported in THE MEDICAL RECORD of June 5, 1886, more than five months before Dr. Loreta operated on the case above referred to. The patient was referred to Dr. O'Dwyer for the purpose of removing the vocal cords on account of bilateral paralysis of the abductor muscles. She had worn a tracheal cannula for two years. Examination showed almost complete occlusion of the larynx from syphilitic adhesions, and the operator enlarged the tracheal opening, broke up the adhesions thoroughly, by inserting a pair of dressing-forceps and withdrawing them open, and then inserted a tube. We understand that he subsequently removed a portion of each cord, as there was shown to be complete paralysis of the abductors, as well as stenosis.

We do not assert that this was the first instance of rapid divulsion of the vocal cords, for others may have performed the operation many times. But certainly Dr. O'Dwyer's case antedates that of Dr. Loreta, and we feel justified, therefore, at least as far as these two instances are concerned, of claiming for America the credit of priority over Italy in the operation of rapid divulsion of the vocal cords for the cure of laryngostenosis.

THE MICROCOCCUS OF TUMORS.

The belief that some forms of tumors are caused by micro-organisms has long seemed very plausible, and diligent efforts have been make to discover these. So far, however, among tumors, only the fungus growth known as actinomycosis, a growth presenting some of the clinical appearances of a maligant tumor, has been discovered to be caused by a parasite.

Dr. Luigi Manfredi, while working in the Laboratory of Cantani, at Naples, discovered quite recently a minute organism which possessed extraordinarily specific and virulent properties. It was obtained from the sputum in two cases of pneumonia, each being a sequel of measles, and running a rapid and highly maligant course. The pneumococcus of Friedländer was observed in each case also. The new organism is oval in form, often appears as a diplococcus, and is about 0.5 mm. in diameter. It has a characteristic method of growth, which is described by Manfredi in his original article (*Fortschritt der Med.*, No. 22, 1886).

A large number of inoculation experiments with pure cultures were made upon dogs, rabbits, guinea-pigs, mice, and birds. With the exception of the last named, which seem to die from blood-poisoning, Manfredi found that the micrococcus uniformly caused one and the same pathological condition. This consisted of the deposit of gray, or grayish-yellow, nodules in the parenchyma of organs, especially of the spleen and lymph glands. The lungs showed in addition the characteristic marks of a more or less intense pneumonia. The nodular masses belong to the type of the granulomata, or infectious granulation tumors. They consist of masses of newly formed cells without blood-vessels, and they begin gradually to become cheesy, to soften in the centre.

The infective granulomata include tubercle, lupus, syphilis, glanders and farcy, leprosy, and actinomycosis. The parasite described by Manfredi produces pathological changes somewhat similar to those of the diseases of the class mentioned.

The Medical Standard is the name of a new medical monthly recently started in Chicago, and published by G. P. Engelhard & Co. It is edited anonymously and with considerable pungency. Regarding the recent interest developed in hepatic surgery, it says: "It is a singular illustration of the influence of cliques on medical science that when the very principles on which the present surgical practices are based were first enunciated by Dr. W. A. Hammond (*Virginia Medical Journal*, October, 1879), they were, although supported by the authority of Dr. Marion-Sims, denounced and ridiculed. Dr. Hammond claimed: That hepatic abscess was much more frequent than was generally suspected, and often passed unnoticed, the symptoms being ascribed to other co-existing diseases; also, that the operation of aspiration was unattended by any danger, and it alone often produced good results on the hepatic and cerebral affection giving rise to the symptoms; that hepatic abscess and other hepatic affections were often of a trophic nature and of cerebral origin.

Milk is not a Good Thing to Give in Diabetes.—This seems to be the prevailing medical opinion just now.

News of the Week.

Death of Dr. Fenner Harris Peckham, of Providence, R. I.—Dr. Fenner Harris Peckham, one of the oldest and best known physicians of Providence, died Thursday of chronic Bright's disease, from which he had suffered for nine years. He was born in Killingly, Conn., January 27, 1820, his father being an able and noted physician of extensive practice. After graduating at Yale Medical College in 1842 Dr. Peckham began his medical practice at Killingly Hill (now Putnam Heights) and removed to Providence in 1852. He was twice chosen president of the Rhode Island Medical Society. He has contributed to literature several valuable addresses and monographs on special subjects, chiefly, however, in the department of medical research. During the civil war he served with distinction as a surgeon, first with Rhode Island regiments, and afterward as surgeon of the board of enrolment of the second Rhode Island district. He leaves a wife and six children. Dr. F. H. Peckham, Jr., to whom in 1878 he relinquished the more arduous duties of his profession, was his only son.

New Hospital Buildings on Randall's Island.—The Commissioners of Charities have secured an appropriation of $25,000, and a new pavilion hospital will be erected this summer.

The Distinguished Italian Ophthalmologist, Professor Magui, died at San Remo on February 2d. He was not only a doctor, however, but a senator and a party leader.

A Diploma Mill in Maine.—The *Boston Herald*, of February 11th, contains an account of the manner in which one of its reporters obtained a degree of M.D., from the "Druidic University of America, State of Maine Branch." The "University" is situated in the city of Lewiston, Me., and occupies a two and a half story wooden building, which is ornamented with the sign of "Dr. Samuel York, Druidic Physician." The reporter represented himself as a young man who wished to settle in the city of Mexico, and there practise medicine in all its branches. With many assurances that the college did not sell its diplomas, the proprietor exchanged a matriculation ticket and a most elaborate diploma for a small amount of money, which was said to cover cost of printing and other expenses. The aspirant was also put through some very farcical examinations, and given some equally absurd instruction, the whole transaction covering some six hours' time within three different days. The *Boston Medical and Surgical Journal* says that the Maine Legislature is taking steps to repeal the charter of the Druidic University.

Medicine in Southern California.—A correspondent writes us that San Diego, and perhaps some other places in Southern California, are hot-beds for homœopaths, eclectics, and irregular regulars, *i.e.*, "regulars" who advertise as electricians, etc. We learn that a county society has been organized and an attempt made to collect into it the best elements of the profession. We wish it success.

Insane Asylums and Politics.—The House Committee investigating the management of the Indiana Insane Asylum has proved by several of the attendants that there was maggoty butter in the asylum in July, as charged, when sixty pounds of it were thrown into the sewer just before the committee visited the institution, and that such butter was on the tables in October last. It was also proved by a witness that a drove of hogs was received at the asylum, said to be from Dr. Harrison, the President of the Board of Trustees, which as soon as he saw he found were suffering from cholera; that some of them died from that disease, and that the witness killed hogs for the tables from the pen in which some of the animals were lying dead. These were the charges made by the Civil Service Reform Association.

Removal of the Ovaries for the Cure of Epilepsy.—Dr. J. Schramm reports two cases in which he has removed the healthy ovaries for the relief of epilepsy. Both cases were cured—at least, no fits have occurred since the operation, over a year ago.

The Medical Department of the Army.—The U. S. Senate and House have passed the bill establishing the order of promotion in this branch of the service. The measure provides that assistant surgeons of the army who have served twenty years shall be appointed to the office of surgeon, with the rank of Major, to date from the completion of such service. The service is to be estimated, as is now done in computing service for longevity pay, except that service under present commissions is to be counted from the date of the commissions. No assistant surgeon, however, can be promoted under the act until he has been examined and found qualified for promotion by an examining board. The bill also provides that the whole number of officers in the medical department shall not be increased under its terms.

The Emigration of White Blood-cells.—Dr. T. Wharton Jones, to whom belongs the honor of first discovering the amœboid movements of the white blood-cell, asserts most positively that it does not wander from the blood-vessels, as Cohnheim claimed. We do not find, however, that Dr. Jones brings forward any evidence to offset the observations of Cohnheim.

An Epidemic of Small-pox is threatening Australia, more particularly New South Wales.

Castration and Spaying.—The term castration has been incorrectly applied to the removal of the ovaries. The term "spaying" is objectionable to the spayers, as conveying in too plain English the significance of the term to the spayee. "Spaying" is very good English, however, and will answer the purpose quite as well as oöphorectomy.

A Medical College for Women is to be established in Cincinnati. Our country is already tolerably rich in these institutions, which, however, are not particularly rich in themselves.

The Death of Professor Johann Rudolph Ranke, of the University of Groningen, is announced. For the last eighteen months he had suffered from the effects of blood-poisoning, which had caused him continual severe pain; but he stuck most heroically to his work to the last, teaching from his bed students who were about to present themselves for examination, and, on days when he was somewhat better, going in a bath-chair to the university or hospital. Only three days before his death he performed an important operation.

Politics and the Indiana State Board of Health—The pernicious influence of partisan politics upon the conduct of State medical institutions, health boards, etc. is illustrated apparently in Indiana. The *Fort Wayne Journal of the Medical Sciences* says: "We learn that some amendments to the law under which our State Board of Health is organized have been recommended to the Legislature, and we sincerely hope that they may be passed. One provision is that the State Board shall be consulted in the appointment of County Secretaries, or rather County Health Officers. This is a very important amendment, and should be passed at once. As the law now is the County Commissioners appoint the County Health Officers, and they generally appoint some one who can render them the best and the most valuable service at the next election, and not as to his ability as a sanitarian or qualifications as a health officer. The Health Officers generally appointed are third-rate ward politicians.

Deaths of Prominent European Physicians.—To the announcement of the death of Professor Carl Schroeder, made last week, we regret to have to add that of the death of Professor T. Gallard, widely known as a gynecologist, and of Dr. Raige-Delorme, a prominent physician, medical journalist, and editor.

The "Practice Limited" Rule.—"One of the most absurd of the decisions of the Judicial Council of the A. M. A. is the practice limited pronunciamento." So says the *Weekly Medical Review*. We ventured to make a similar criticism some time ago, and are pleased to observe that our judgment has taken its starry way westward—skipping Chicago.

Death of Dr. W. S. Little.—Dr. W. S. Little, the eminent Philadelphia oculist, died at Aiken, S. C., February 18th, after a long illness.

THE REASONS WHY THE LEGISLATURE SHOULD PASS THE NEW MEDICAL BILL FOR THE STATE OF NEW YORK.

The following memorandum has been prepared in behalf of the pending bill to codify the medical penal law (Assembly 129, Senate 45). The opposition this year seems to be led by one eclectic practitioner, who on his own account is sending out postal cards to instrument-makers and others, asking their aid. The eclectics as a body appear to assent to the bill. It can only fail by the apathy of those who have approved it. Every one interested should communicate his views to his Assemblyman and Senator.

Memorandum of Reasons why the Legislature should pass the Bill, entitled "An Act to Regulate the Licensing and Registration of Physicians and Surgeons, and to Codify the Medical Laws of the State of New York;" being Assembly Bill 129, and Senate Bill 45.

It is purposed to set out (1) the history of the bill; (2) who favor and who oppose it; (3) its scope as compared with existing law, and (4) the arguments that have been adduced for and against it.

I. History of the Bill.—At present, the highest standard of license to practise medicine in this State is a diploma from a chartered medical school empowered to confer the degree of Doctor of Medicine, and it was held, in a comparatively recent case, that a diploma purchased from the president of such a school was a valid license, although signatures upon it were forged or obtained by that officer's misrepresentation. There are some schools that require earnest work, tested by careful examination of all candidates for their degree, and others that graduate matriculants after merely nominal compliance with the prescribed terms of preparation, while still others are incorporated solely to sell diplomas. As a license, the diploma of the poorest incorporated school is as good as that of the best. In order to mend this evil, an effort has been making for several years to establish a uniform standard of license, by creating a State board of medical examiners. This effort has failed hitherto, because of the impossibility of harmonizing opposing interests in the organization of the proposed Board. The law recognizes, by having incorporated them into separate societies, three classes of practitioners of medicine. These are the regular physicians, as they call themselves, or the old school or allopaths as they are called by the two other classes, who have taken for themselves the names of homœopaths and eclectics. Roughly speaking, there are about 6,000 regular physicians in the State, 1,500 homœopaths, and 600 eclectics. Upon ordinary principles of representation, the regular physicians maintained that each of these classes should be entitled to membership in the proposed board only in proportion to its numbers. The homœpaths and eclectics demanded either several boards (which would imply the very evil to be remedied, a variable standard of qualification) or an equal representation for each class on a single board, arguing that they, under the plan favored by their opponents, would cease to exist as separate schools.

But although the various bills to create examining boards failed, all parties in interest were substantially agreed that the existing penal law should be amended. For this purpose a bill was drafted in 1885 (Assembly Bill No. 820), which being introduced into the assembly by Mr. Van Duzer, on April 22d, passed that body. Introduced by Mr. Robb in the senate (Senate No. 419), it would have passed except for the lateness of the session. In 1886, the experience was reversed; the bill, after careful revision, was introduced by Dr. Craft in the assembly (No. 903), on April 7th, and by Mr. Connelly in the senate (No. 485), on the same day. It passed the senate and failed to reach a vote in the assembly.

The present bill, introduced in assembly by Mr. Hamilton, and in senate by Mr. Connelly, has been specifically approved by the State Societies of both regular and homœopathic practitioners, which are bodies made up of permanent members and delegates from County Societies, representing about fifteen-sixteenths of the whole number of legally qualified physicians of the State. It is understood, also, that at least one eclectic society has approved the bill, and certainly no representative of such a society has appeared to oppose it before the committees having it in charge. It seems, therefore, not unfair to infer that the majority of the eclectics assent to the measure, and it may be reasonably asserted that

II. The friends of the bill are: (1) All physicians desirous of maintaining some standard of professional learning and suppressing charlatanism, and (2) all private citizens who believe that the care of life and health should be entrusted to educated, rather than to ignorant men, and that none should be permitted to attempt the cure of human infirmity who are unfitted by education to write a death certificate, or recognize the presence of a contagious disease.

Its opponents are: (1) All men who honestly believe that the State should not care for the public health, or enact sanitary laws, or inspect steam boilers or provisions, or undertake any similar duty, but no intelligent or consistent argument from this extreme *laissez faire* standpoint has yet been made before any committee; (2) all who sincerely or ostensibly believe in witchcraft, voudoo, occultism, and the various forms under which ignorance, and craft batten on delusion.

III. The Scope of the Act as Compared with Existing Law.—This has been already shown in an article reprinted from The Medical Record of January 8, 1887, and sent to every member of the Legislature. The purpose of the act is (1) the regulation of the licensing and registration of physicians, and (2) that which is above all things desirable in penal legislation, the substitution of one statute for several. The bill is chiefly a codification of existing law, as will appear from the following analysis.

Section 1 forbids a minor or unlicensed person to practise medicine. This is the law now (see Laws of 1880, ch. 513; Penal Code, section 356, and compare Rev. Stat., pt. 1, ch. 14, tit. 7, sections 16, 17, 18, and 20 for the old law).

Section 2 prescribes the qualifications of a licentiate. It makes no change in the law beyond raising the age for beginning study to eighteen from sixteen, and requiring greater particularity in the endorsement of diplomas (see R. S., pt. i., ch. 14, tit. 7, sections 8 to 15, inclusive; Laws 1872, ch. 436; Laws 1880, ch. 513; compare Laws 1836, ch. 532).

Section 3 provides for registration, making no change in the law beyond prescribing forms by which to prevent careless and improper registration of unqualified persons (see Laws 1880, ch. 513).

Section 4 provides for new registration by mail of a registered practitioner removing to a new county. The purpose of the registry law is to have a list of licensed practitioners in every county. At present every registration must be made in person; this change makes the law effective and imposes no hardship on the practitioner (see Hilliard *vs.* State of Texas, Appeals, 69, laying down the same rule as our courts have followed in unreported cases).

Section 5 limits the time in which persons claiming to be licentiates under the law of 1880 and prior acts may register. There are probably few, if any, such persons, as all such practitioners have had already six years in which to register.

Section 6 defines the practice of medicine and forbids the improper assumption of the title Doctor of Medicine. Various instrument-makers having expressed a fear that their business might be included in the terms of the definition, the friends of the bill agreed to strike out the whole of the section except the last sentence, prohibiting the unauthorized use of the title M.D., which will be incorporated in Section 7. This meets the only objection of any force, and leaves the courts to decide in each case whether a defendant, in view of all the facts, has practised medicine, thus preserving the present law without change in this regard (see Smith *vs.* Lane, 24 Hun., 632).

Section 7 enumerates a number of offences, all fraudulent in their nature, that are now scarcely cognizable by the criminal law, viz., perjury in registration, counterfeiting, buying, selling, and altering diplomas, or practising under diplomas forged or bought, falsely personating another practitioner, and practising under an alias, or without registration, or after conviction of felony. The present law only punishes practising without a license. It was intended to punish false swearing or registration, but falls short of so doing by defective phraseology (Laws 1880, ch. 513; Penal Code, section 356).

Section 8 provides civil actions against unlicensed practitioners. The reason for this is twofold. In civil action against an impostor with papers purporting to be diplomas of a foreign university, it may be necessary to issue a commission to take testimony, and this can not be done in a criminal case by the prosecution. Second,

experience shows that merely to deprive an unlicensed practitioner of an action for services only makes him demand fees in advance; therefore an action against him to recover money paid is given to the patient. This is new (compare Rev. St., pt. i., ch. 14, tit. 7, and Laws 1830, ch. 126).

Section 9 exempts from the operation of the statute the persons now exempt and also dentists in their specialty, officers of hospital staffs, and physicians attending individual cases but not regularly practising in a county in which they are not registered.

Section 10 repeals specifically by title every act *in pari materia*, thus avoiding any question that might arise as to repeal by implication, and completely codifying the penal medical laws.

IV. The Arguments For and Against the Act.—Having shown the scope of the measure and that it is substantially a codification, or reduction of several incoherent statutes to one simple act, it only remains to cite and refute the arguments brought against it in committee during the last three years. These are:

1. The bill is unconstitutional and an infringement of personal liberty.

2. It will, if enacted, drive out of practice many persons who, although confessedly ignorant in medical science, have yet occult, mysterious, or even God-given powers whereby they effect cures where the physician's skill has failed.

3. The measure is in the interest of limiting competition by reducing the number of practitioners.

These three misstatements of fact constitute but one argument, to which the simple answer is that:

The bill is not unconstitutional, because (1) it does not infringe human liberty, unless the public school system, the civil service system, and every system requiring educational qualifications of candidates for certain privileges are such infringements, and, therefore (2) it does not prevent any class of persons as a class, unless the ignorant are to be so regarded, from practising medicine or forbid the practice of any system or specialty. In this respect it does not change existing law. (3) It is not to be upheld for one moment on the ground that it will pecuniarily benefit physicians as a class. Physicians approve of it, as lawyers approve of examinations of attorneys before admission to the bar, because it is to the advantage of the reputation of the profession, as well as for the public benefit, that doctors should be educated in medicine.

The true reason of such laws is thus stated by the revisers of the New York Statutes (R. S., 2d ed., vol. iii., p. 526, note to pt. i., ch. 18, tit. 3): "The uniform experience of every civilized country has shown the wisdom and policy of regulating the practice of the healing art *so as to secure the community* against the impositions of ignorance and quackery. The profession of physic and surgery is one of the very few employments which cannot with safety be left by the Government exclusively to individual sagacity and private interest, to determine the qualifications of its practitioners."

In this State the courts have uniformly spoken in the same spirit. Such laws have been always upheld as constitutional from the time of *ex parte* Smith (10 Wendell, 449) to the present moment. The enactment of the law of 1844, which the opponents of this bill would gladly restore, was characterized as the triumph of quackery (Bailey *vs.* Mogg, 4 Denio, 60). Judge Cooley says: "No one has any right to practise law or medicine, except under the regulations the State may prescribe (Cooley on Torts, pp. 289, 290). The Supreme Court of the United States has affirmed the right of a State to regulate the practice of professions (Bradwell *vs.* Illinois, 16 Wall., 142); the courts have so held in Massachusetts (Hewitt *vs.* Chavier, 16 Pick., 353), in West Virginia (State *vs.* Dent, 25 W. Va., 1, an exhaustive opinion), in Minnesota (32 Minn., 324), in Missouri (10 Mo., 591), in Illinois in several cases, and, in short, in every State where the question has been raised. No case can be cited to the contrary.

If the bill forbade the practice of medicine by any class of people, as a class, or otherwise than according to a prescribed system, it might be open to the charge of unconstitutionality, but it does not. The sophistry of its opponents, by which some honest men have been deceived, consists in their false assertion that the act will have such an effect. In fact, however, any person having complied with the present statutory requirements as to study and examination, which it must be remembered this act does not change, may practise as he pleases, and as his honest conviction dictates. He may make his diagnosis by clairvoyance, if he has that gift; he may cure by the rites of voudoo and mumbo-jumbo, by magnetic passes, by Indian medicine methods, or, if he prefer to be a specialist in Chinese practice, by sounding the tom-tom and hewgag till the evil spirit flies with its hands over its ears; and, if he believes himself possessed of greater powers of supplication than his fellow-man, there is nothing in the bill to prevent him from praying, so long as his patients consent to be preyed on. He may be liable civilly for malpractice under the common law, on account of such idiosyncrasies, or, perhaps, even criminally for manslaughter; but he will not be liable under this bill as an unlicensed practitioner.

"But," say the opponents of the bill, "it comes all to the same thing, for men who have studied medicine will do none of these things, and the bill discriminates unfairly against the ignorant, *ergo*, it operates against a class."

Here at last is the issue clearly defined. Let it be stated in the words of our adversaries. In 1883 they presented a great petition and memorial to the senate asking the repeal of the law of 1880; they circulated the memorial again last year. It contained this statement, noteworthy in the nineteenth century and a land of public schools:

"This law deprives from practising within this State persons who are gifted with the power 'of healing by the laying on of hands' through the presence and imparting of vital magnetic force and otherwise.

"Some of these powers are natural to the practitioner and cannot be imparted nor increased by, but are more LIKELY TO BE DIMINISHED OR IMPAIRED BY, THE COURSE OF STUDY REQUIRED BY THE MEDICAL COLLEGES."

There is the frank confession of the handful of opponents of a measure, approved by the representatives of over seven thousand intelligent physicians, that their methods are such as no educated physician would adopt. They have made their own issue and cannot escape it. Every one who votes on this bill upon arguments made in committee, must take his stand on the side either of intelligence or of gross ignorance or brazen imposture.

But, finally,

V. If there be any one who is willing to let everybody practise medicine regardless of educational qualification, either because he believes in the efficacious work of the unlicensed, or honestly thinks the State should not interfere in such matters, let him remember that by the striking out, as above noted, of Section 6 from the bill as originally introduced, the law as to unlicensed practice is not changed, except in so far as civil actions are provided for; *and, therefore, if this bill fails the present law will still punish unlicensed practitioners, while those to be benefited by its failure are the felons, forgers, and impostors mentioned in Section 7.*

All of which is respectfully submitted.

W. A. Purrington,
Counsel of the Medical Society of the County of New York.

An effort is being made by the Kings County (N. Y.) Society to place cocaine among the list of poisons.

Reports of Societies.

NEW YORK ACADEMY OF MEDICINE.

Stated Meeting, February 17, 1887.

A. JACOBI, M.D., PRESIDENT, IN THE CHAIR.

THE PRESIDENT delivered the remaining portion of his inaugural address, in which he dwelt chiefly and at some length on the baneful influence of professional advertising in the newspapers. "What must be prevented is the appearance of reports of striking operations or rare cases which cannot be possibly of interest or a source of instruction to the public at large."

DR. C. L. DANA then read a paper on

SPASTIC ATAXIA, FUNCTIONAL AND ORGANIC, AND THE COMBINED SCLEROSES OF THE SPINAL CORD.

He described a group of symptoms forming a new spinal disorder, and thought that the anatomical basis in typical cases was a sclerosis of the three long-fibre systems of the cord.

The discussion was opened by DR. M. ALLEN STARR, who thought that a thoroughly satisfactory name for the disease described by Mr. Gowers and Dr. Dana must still be looked for. The cases were not all ataxic, nor were they all paraplegic, and the term spastic ataxia was subject to the same criticism which Dr. Dana had entered against the name given by Mr. Gowers.

With regard to the anatomical name, "fascicular sclerosis," the term fascicular should not be accepted, because the lesion was not exclusively fascicular; the sclerosis was rather diffused, and did not involve any particular fasciculus throughout its entire course. In the area of sclerosis there was, as Gowers has said, a very great variety of appearances.

The distinction between locomotor ataxia and combined sclerosis was not a clear one, and the clinical picture of combined sclerosis must be further extended; it was still somewhat hazy, and therefore any contribution toward clearing up the picture was valuable.

DR. G. W. JACOBY said that the remarks made by Dr. Starr had strengthened him in his ideas of this disorder. He did not think that much would be gained from clinical pictures, as from them we were working very much in the dark.

Cases of tabes occurred in which the lateral columns were primarily affected, and the posterior columns secondarily, and *vice versa*, but whether these could be diagnosticated was exceedingly doubtful. It seemed that the majority of the cases of spastic ataxia were really tabes with secondary spastic symptoms, and that the spastic cases with secondary tabetic symptoms were much rarer.

DR. E. C. SEGUIN fully agreed with what Dr. Starr and Dr. Jacoby had said as to the departure in pathological anatomy, in this disease, from the typical fascicular degeneration. In the specimens exhibited by Dr. Dana there were deviations from the typical degeneration of the posterior columns and the pyramidal tracts. It seemed to him that the sections belonging to Dr. Hammond's case presented a sclerosed appearance of nearly two-thirds of the cord, including the lateral columns and a part of the anterior columns.

He then submitted the following epitome of one of his own cases, in which there was a post-mortem examination. A woman, fifty-seven years of age, who had suffered from gastro-intestinal and hepatic derangements for ten or twelve years, first had numbness and awkwardness in both hands in 1879, which was temporary. In the autumn of 1880 she was very well and active, and was much in society. In November she had paræsthesia, and felt as if tangled strings were drawn under her toes. No actual numbness. Found it difficult to raise the feet. Paresis of feet and legs increased, with only slight numbness. Hands and arms normal. In the autumn of 1881 there was a rapid increase of the paresis, and numbness extended to the waist. Walking was slow and difficult; legs stiff in the moving, and disposed to jerk; œdema of the feet and legs in the evening. Within the last two weeks she has frequently lost her legs in bed (anæsthesia), and micturition has been very slow; fingers numb, hands weak and awkward; back painful. Has a constriction band above the waist. No head or eye symptoms. No tenderness of spine. Slight anæsthesia of fingers; they are awkward and feel queer, and are ataxic. Pupils normal; legs paretic. Great increase in reflexes at sole, and at knees; legs somewhat tetanoid; slight sensory symptoms, but no fulgurating pains. Later, more complete paresis; whole body inclined to stiffness; bedsores; œdema of the legs, hands, and face; urine contains a slight quantity of albumen, but no casts; death. Examination of the spinal cord showed sclerosis of the lateral columns extending to the extreme lateral parts of the cord with degeneration changes, and rather irregular in distribution at different levels. The ascending cerebellar fasciculus was affected in some sections, but not in others.

The case apparently belonged to Dr. Dana's second group of spastic paralysis plus sensory symptoms.

DR. W. R. BIRDSALL thought that in attempting to classify many of these cases, while we might be able to separate them, we were able to find a certain number which resembled each other so much that a great many subdivisions could be made, and it becomes questionable whether they were not subdivisions which resulted from various degrees rather than from distinctive types of disease. There was, perhaps, a tendency to attempt to group these cases into distinct diseases, whereas they simply represented variations in type of a general condition, that may affect one column or one particular tract and produce certain symptoms in some cases, while in other cases the disease invades other areas to a little greater extent at different levels transversely in the cord. The symptoms resulting from these variations may be quite marked, and still be due to a process which will hardly bear separation. Gowers, in his attempt to separate the cases of chronic cord trouble, had used the term ataxic paraplegia in distinction from spastic paraplegia, making this difference, that in the spastic paraplegia there were exaggerated reflexes, absence of sensory disturbances, and absence of ataxia; whereas, in ataxic paraplegia there was the same group of symptoms, with the addition of ataxia, and the sensory disturbances do not bear a prominent portion. In most cases of combined sclerosis, sensory disturbances are quite common, as in Dr. Dana's cases, and Gowers has taken pains to explain why certain symptoms are absent, etc. But in making the classification from a clinical standpoint, we cannot attach it to any particular type of fascicular degeneration, as it has been shown that these cases exhibit varying changes in the cord at different levels. There could be no question of the advantages in closely grouping these cases from the standpoint of comparison, but it seemed to him, however, that neurology had made sufficient advancement to prevent making too exact typical forms of disease to fit symptoms into. He made these remarks without reference to the paper of the evening or the remarks that had been made in the discussion.

DR. STARR said he should not be willing to have it understood that he indorsed the diagnosis of combined sclerosis in the specimens from Dr. Hammond's case.

DR. N. E. BRILL said he could not take the ground that there was a general disease which we call sclerosis, and then out of this attempt to make a special group of cases, where this general disease involved special systems. Given a general pathological process, such as sclerosis, it was well known that certain tracts were more vulnerable than others, of which the chief example was the posterior columns. But the process involved other tracts, although how it did so was not known. His idea

of the cases presented by Dr. Dana was that they belonged to a special group of sclerotic cases, and that they involved special classes of nerve-cells and fibre systems in the cord.

THE PRESIDENT said he could imagine that sclerotic troubles were propagated along the line of blood-vessels. Not many years ago an anatomist published a pamphlet on the smallest blood-vessels of the spinal cord, and illustrated what was proved by injection, that there were much smaller and more extensive and delicate vessels than had been laid down in text-books up to that time. These observations had proved that there exists a very intense vascular communication between the fasciculi, and if that be so, he could well imagine that a diffuse inflammatory process would spread along the line of the smallest blood-vessels and the interstitial tissue, binding them together. That would explain why the forms of spinal-cord disease were so much mixed.

DR. DANA accepted the criticism of the name made by Dr. Starr. With regard to the pathology of the disease, he had not endeavored to lay down anything very positive concerning it. With regard to the disease being a combined fascicular sclerosis, he would mention that Strümpell had reported another case in which he says that this disease or spastic ataxia has typical post-mortem showings, which Dr. Dana referred, in the main, to these three columns. Strümpell insists most strongly that it is a primary typical form of disease. While that might be true, Dr. Dana's view was that they were liable to extend into other parts.

As to some of the cases referred to, they could not be discussed without bringing in their individual peculiarities, and with regard to progress of the disease from one strand to another, Dejerine had published a case in which he thinks the changes have taken place by means of lepto-meningitis. Dr. Dana, however, thought that all writers agreed that this was not the way in which they were transferred. It seemed to be rather a primary change in these strands, or else it started from a rather diffuse myelitis, and was to some extent secondary. As to Dr. Hammond's case, which gave the symptoms of spastic paraplegia, it showed that some of these cases have a different pathological anatomy. With reference to the pathological findings, while they were as Dr. Starr had said, it seemed to him that there was sclerosis in the lateral columns, and that was also the opinion of Dr. Spitzka, who had seen the sections.

AN AMENDMENT TO THE BY-LAWS

was adopted which abolishes the privilege of commuting for annual dues.

The Academy then adjourned.

THE PRACTITIONERS' SOCIETY OF NEW YORK.

Stated Meeting, February 4, 1887.

GEORGE F. SHRADY, M.D., PRESIDENT, IN THE CHAIR.

DR. BEVERLEY ROBINSON read a paper (see p. 230) on

HEART-STRAIN AND WEAK HEART.

DR. W. M. CARPENTER was invited to open the discussion, and he remarked that he had never been able to entirely convince himself that the so-called "irritable heart" referred to by Dr. Robinson and described by DaCosta was a very frequent primary disorder. The relation between the centre of the circulatory apparatus and all other parts of the body was so intimate and constant that an exceedingly large percentage of functional disorders of the heart could be traced to external causes.

The carefully observed cases reported by Dr. Robinson, however, would lead to the conclusion that there is a certain percentage of cases in which what had been called irritable heart, or heart-strain, or weak heart, existed as a primary disorder. When, however, affections of the hepatic, gastro-intestinal, genito-urinary, pulmonary, and nervous systems were excluded, together with the affections belonging to the group of organic diseases of the heart, the number of cases could not be very large.

DR. C. L. DANA had been very much interested in the paper, because attention had been directed to the possibility of the existence of muscular defect in some cases which are frequently, perhaps commonly, regarded as nervous disturbance of the heart, and the patients are told that they will get well. Still, it had been observed that in some of these cases digitalis had been taken with marked benefit. He was in some doubt, however, as to the extent to which we could speak of a weak heart, referring only to the muscular structure, and he was somewhat inclined to side with the view advanced by Dr. Carpenter. It seemed to him that the heart could not be regarded as a muscular organ alone, nor should its pathology be studied alone. For it is the end of certain sets of nerves, and in other parts of the body the pathology and physiology of the two go together, almost as much as do the fundus of the eye and the entire tract of the optic nerve.

Probably in most of the so-called cases of weak heart the trouble is nervous, and not muscular, and the therapeutics rather sustain that view. In addition, it has been found of late that there are actual changes in the cardiac nerves which produce symptoms resembling those said to belong to heart-strain. For example, in multiple neuritis there is almost always great dyspnœa and rapid heart action, with a pulse from ninety to one hundred without fever. In these cases also there is præcordial distress, and examination has revealed actual lesions of the pneumogastric nerve. Again, in cases of locomotor ataxy there are cardiac crises in which occur symptoms very similar to those said to be dependent on a weak heart without organic disease, and autopsy has revealed, here also, lesions of the pneumogastric nucleus and of the nerve. These cases show that diseases belonging to the nervous system are capable of producing lesions of the cardiac nerves.

Again, the author of the paper had reported one case which followed Chagres fever. It was well known that it was not rare for neuritis to follow such fevers, and it was not improbable that there were changes of that kind in the case cited.

At the last meeting of the Society he referred to the fact that Semmola had discovered changes in the cardiac nerves, and to the affection he had given the name "cardiac ataxia," occurring in persons who had been subject to severe strain for some time. Another confirmation was the fact that these cases occur very infrequently among laboring people, unless there are evidences of syphilis or arterial disease.

He would say, therefore, that severe physical labor alone does not cause heart weakness.

There was another interesting point to which he would refer, and it was that asynchronous beating of the heart was mentioned as one of the symptoms of heart-strain, or weak heart. Cases of that kind had been reported, but he had often wondered if any such thing did actually occur. It seemed to him it was extremely improbable that the ventricles should contract at unequal intervals. Experimentally, he did not recollect having seen the ventricles contract asynchronously.

DR. J. B. HUNTER had been impressed by the clinical fact that many persons suffered from cardiac symptoms without appreciable organic lesion, and he had also been impressed by the fact that these patients were, many of them, capable of performing a great amount of mental and physical labor. He recalled the case of a woman who died recently, who had suffered from marked cardiac disturbance during the last fifty years, but had conducted a large female seminary, and finally died of pneumonia.

He had had, in two cases, very marked cardiac symp

toms in persons otherwise in perfect health, apparently. There was no evidence whatever of organic cardiac disease, and the cases had interested him very much with regard to the difficulty of making a prognosis. At all events, the condition of irritable heart, so called, according to his observation, was not incompatible with the performance of a large amount of work. At one time he hesitated with reference to administering ether to these patients, but had subsequently learned that they take anæsthetics without inconvenience, thus giving support to the probable explanation given by Dr. Dana, that there is a nervous lesion apart from the cardiac disorder.

Dr. Robinson, in closing the discussion, said that in the study of his cases he had very carefully eliminated the sources of error to which attention had been directed in the discussion, and, as a matter of fact, had been surprised to find that he had so many cases recorded which could not be explained by secondary causes.

With regard to the point made by Dr. Dana, he had no doubt that in many instances it was correct, and the correctness of the view was sustained by the cases cited by Dr. Hunter. At the same time, he believed that his paper would prove useful in directing attention to these peculiar cardiac cases, and enable us the better to separate and treat them.

The Society then adjourned.

NEW YORK PATHOLOGICAL SOCIETY.

Anniversary Meeting, January 12, 1887.

T. Mitchell Prudden, M.D., Vice-President, in the Chair.

REPORT OF THE COMMITTEE ON MICROSCOPY.

Dr. L. Waldstein reported that the specimen of *multiple abscess* of the lung with high temperature presented by Dr. Holt showed the changes belonging to acute rapidly progressing interstitial pneumonia, with degeneration and formation of abscesses. No tubercle bacilli were found.

Dr. G. C. Freeborn reported that the tumor removed from the roof of the mouth by Dr. Robert Newmann was a simple fibroma.

Dr. W. P. Northrup presented a lung removed from the body of a child three years of age that died of

PNEUMONIA FOLLOWING MEASLES.

The special feature of interest was the infiltration of the bronchi showing the bronchial tree. The pneumonia was mostly in the posterior portion of the lower lobe, slight in the upper lobe, and it was very acute.

Dr. W. H. Porter presented two lungs that illustrated

THE PECULIAR APPEARANCES OF PULMONARY SYPHILIS.

In the first case the patient entered the hospital in a semi-comatose condition, and died soon afterward. There were six or eight small nodules in the apex, and there were gummata in the pia-mata and the liver. He had been unable to find tubercle bacilli in the specimen, but had found the bacillus of Lüstgarten.

In the second case the man entered the Presbyterian Hospital suffering from acute pleurisy, from which he recovered. He died while undergoing an operation for hemorrhoids. One lung was found riddled with small cavities, while the other lung was unaffected.

With reference to microscopical examination of the lung-tissue in these cases, Dr. Porter had been unable to find Lüstgarten's bacillus except in the centre of the small nodules. He had never found it in either the bronchial secretion or in the cavities which had begun to discharge their contents.

Dr. Porter exhibited microscopic slides that showed the bacillus of syphilis.

Dr. L. Emmett Holt presented the lungs of a child eight months old that died of

PERSISTENT BRONCHO-PNEUMONIA.

The pneumonia was primary, and its only special feature was its duration. The amount of disease was considerable. The right upper lobe was completely solid, and seemed to be made up largely of connective tissue. At the extreme apex were four or five small abscesses. There was also infiltration of the bronchi and dilatation with cavities.

TYPHOID FEVER SIMULATING CEREBRO-SPINAL MENINGITIS.

Dr. R. W. Amidon presented specimens accompanied by remarks on the differential diagnosis between certain atypical cases of typhoid fever and cerebro-spinal meningitis.

The specimens were from the body of a woman, aged thirty, who was a patient of Dr. A. F. Currier. About November 19th she began to suffer from pain in temples and occiput, worse in the latter region, and much pain and stiffness in the back of the neck. She had some chills, and thought she had caught a severe cold. She was first seen by Dr. Currier November 26th, when all these symptoms were aggravated. Her temperature was 103.8° F., pulse 100, and she had *no* abdominal symptoms whatever. The nervous symptoms continued, and the temperature ran a peculiar course, there being a remission on the morning of December 6th. Some antifibrine was then being given, but not enough to explain the low temperature. Dr. Amidon saw the patient in consultation once only, December 8th, on the eighteenth day of the disease. Then, at 8 P.M., the temperature was 103.6° F., pulse, 90. The patient was not in a typhoid condition. She complained only of occiput headache, and pain and stiffness in the back of the neck, general sensitiveness, and twitching of the extremities. On examination, he found her to have marked photophobia, a very stiff neck, which was very sensitive to the touch, as was the occiput and spine, and there was marked general hyperæsthesia. There was no ileo-cæcal gurgling, nor was the abdomen more sensitive than the rest of the body. She had had no eruption, nor diarrhœa, the stools being normal, and assimilation of light food was apparently perfect. The absence of common symptoms of enteric fever, and especially the remission of the temperature, together with the marked prominence of nervous symptoms from the start, led Dr. Amidon to favor a diagnosis of cerebro-spinal meningitis. He gave a bad prognosis, and advised that a close watch be kept for an eruption, and also for enteric symptoms. December 8th, the temperature in the morning was 100.6° F., and at night the same.

December 10th.—With a rise of temperature came a rash which Dr. Currier said was bright and scarlatiniform, and covered *every part* of the body, and lasted several days.

December 21st.—The patient developed an acute bronchitis.

December 26th.—The temperature was normal, and remained so or subnormal *one week*.

January 1st.—She was overfed, and vomited. In the next few days the patient developed indubitable symptoms of septicæmia, with a very irregular temperature (higher in the morning) and frequent chills. These symptoms subsided, and on January 10th Dr. Currier considered the patient again convalescent.

January 11th.—She died suddenly of an immense intestinal hemorrhage in the eighth week of her illness. On autopsy the spleen was found to be about four times its usual size, dark and friable. The ileum and colon were nearly full of dark fluid blood. The ileum was the seat of many entirely healed Peyerian ulcers, and many unhealed ones, from one of which, about eighty centimetres from the valve, the fatal hemorrhage had occurred.

The cæcum and the ascending and transverse colon were the seat of small, round, elevated ulcers, many of them covered with grayish protruding sloughs, which evidently consisted of necrosed solitary follicles and the superjacent mucous membrane. The peritoneum covering the large ulcers in the ileum was covered by an organized fibrinous exudation having a punctate appearance.

Dr. Van Santvoord had, in two cases, met with septicæmia associated with symptoms that pointed toward cerebro-spinal meningitis. The first was a case of surgical kidney following an operation on a urethral stricture, and in the second the source of the septicæmia was an abscess of the hip-joint that had not opened externally.

Dr. L. Waldstein could scarcely recall a case, in all the post-mortem examinations he had witnessed in Europe, in which the intestinal lesions of typhoid fever were so marked in the colon as he had been accustomed to see them in New York during the last three or four years. During these three or four years he had hardly seen a post-mortem examination after typhoid which did not show that the colon was more or less involved; in many cases the lesions were almost entirely in the colon, and in the neighborhood of the ileo-cæcal valve in the ileum. He had often asked himself the question, Why this difference in appearance? and he would ask those who had had more experience in the treatment of the disease than he had if the use of drugs here which were not used in typhoid fever abroad might not be the cause. He had thought it possible that this colo-typhoid might be auto-infectious, and thus the poison be carried into the colon. Perhaps the antiseptic method of treatment employed extensively abroad might explain the rarity of the lesions in the colon—that is, the calomel treatment in the incipiency of the disease.

Dr. J. C. Peters said that he saw typhoid fever with Schoenlein in Berlin, and attended post-mortem examinations with Rokitansky, where he saw the typical morbid appearances of the intestines, in which the ileum was largely involved and the colon but little or none at all. In the early history of typhoid fever, in New York, the same appearances were seen, and it was only quite recently that the involvement of the large intestine had been observed.

Dr. Amidon said Dr. Peabody had mentioned to him that he had never seen a case in which the existence of cerebro-spinal meningitis was suspected and the autopsy revealed typhoid fever, but that he had made a post-mortem in a case in which typhoid fever was diagnosticated, and it was found that the patient died of cerebro-spinal meningitis.

Dr. Wesley M. Carpenter spoke of a group of cases of typhoid fever which he saw several years ago, and in which cerebro-spinal symptoms predominated; in some cases throughout, but in most for ten or twelve days at the outset, and from that time on the symptoms were those of typhoid fever as ordinarily seen. The most marked case was that of a woman whose symptoms were so obscure, but so markedly cerebral, that the diagnosis was "an obscure manifestation of some inflammatory disease of the brain or its membranes." The case terminated fatally. A neighbor's wife, who was with and waited upon the patient a considerable part of the time, especially at night, was taken sick with unmistakable typhoid fever, and died of hemorrhage of the bowels. All the other patients recovered. The severity of the cerebro-spinal symptoms was greatest at the beginning of the season of the appearance of the fever, and diminished as the season advanced.

The Society then went into executive session.

The college clinics are prosperous, the hospitals are full, clinical material is abundant, and the young practitioner waits in vain for patients.

Correspondence.

OUR LONDON LETTER.

(From our Special Correspondent.)

MR. SUTTON'S RESEARCHES IN COMPARATIVE PATHOLOGY —TUBERCULAR DISEASE OF THE SKULL—TWO CASES OF RECOVERY FROM RUPTURE OF THE BLADDER—A CASE OF SCURVY.

London, February 5, 1887.

At the Pathological Society, on Tuesday last, Mr. J. B Sutton read a paper embodying an account of some further researches which he had made in comparative pathology. Mr. Sutton has now been working for some years in this field. In the present paper he dealt with diseases of the genito-urinary organs in animals. A specimen was shown of the kidney of a sloth with two calculi of oxalate of lime in its pelvis. The animal had lived in the Zoological Gardens for twelve years. Mr. Sutton remarked that renal calculi were excessively rare in wild animals, but not uncommon in domesticated ones. A case of distension of the vaginal, cervical, and uterine cavities of a hog-deer was described. A uterus from an agouti was shown in which some pieces of placenta and fœtal membranes had been retained; suppurative endometritis had ensued, and an ovarian abscess had formed and caused a fatal attack of peritonitis by bursting into the peritoneum. Another interesting specimen shown was that of the uterus of a baboon with the viscera *in situ*, the uterus being in a state of acute retroflexion. In reply to a question from Sir James Paget, Mr. Sutton said the first year at the Zoological Gardens settled the question whether an animal would become diseased or whether it would become acclimatized.

A specimen which evoked considerable interest was one shown by Mr. Bilton Pollard. It was taken from a female child who had died at the age of sixteen months, and consisted of the vault of the skull. In this were four perforations which Mr. Pollard believed to be due to tubercular disease of the bone. The child was first seen when ten months old. There were then four chronic abscesses on the skull. These were scraped out. The smallest one healed, but the others remained fistulous. A fifth one formed and ran a similar course. Four months later, sequestræ, involving the whole thickness of the skull, were removed. Three of the abscesses then healed, but the child wasted and died in two months. Patches of caseous tubercle were found in the lungs and the bronchial glands were caseous. The skull showed four perforations, but in three of these the borders were smooth and healthy. Along the upper border of the other perforation (one in the occipital bone) there were still signs of disease present. Mr. Pollard said he had examined some of the granulation tissue and one of the pieces of bone which had come away. They showed the structure of tubercle on microscopical examination, but he had failed to find any bacilli. There were no signs of syphilis in the skull. Volkmann had described similar cases of tubercular disease of the skull causing perforation. Mr. Barling remarked that he had seen a similar specimen in a child. Several speakers made remarks on the subject, and the rarity of the specimen was recognized generally. Mr. Pollard, in replying, remarked that Volkmann had collected eleven cases of tubercular disease of the skull. In some of these, caries, rather than necrosis, was the chief feature. In his own specimen, the diseased bone appears to have been previously infiltrated with tubercular material and then periostitis, ending in necrosis, had occurred.

Sir William MacCormac has lately had under his care at St. Thomas' Hospital two cases of rupture of the bladder ending in recovery. Curiously enough, the cases occurred within a month of each other, the patients being admitted on successive taking-in days. In neither were

the symptoms at first very well marked. In one they were so slight that the house-surgeon, who first saw the patient, sent him home, and he only returned to the hospital on the symptoms becoming aggravated. The other patient walked to the hospital immediately after the accident—a distance of about a mile. In both cases Sir William MacCormac performed a very similar operation. The abdomen was opened, the rent in the bladder closed by sutures, and the abdominal wound then closed. The opening in the bladder was about four inches in length in one case—two inches in the other. Both the patients were males. Antiseptic precautions were employed throughout, and the cavity freely irrigated with antiseptic solution, before closing the abdominal wound. Both patients recovered without the occurrence of a single bad symptom or any noteworthy rise of temperature. The cases are shortly to be brought before one of the London societies. No case of intra-peritoneal rupture of the bladder has, I believe, previously been placed on record in this country. In Mr. Rivington's monograph on the subject he refers to eight reported cases of recovery after intra-peritoneal rupture. Seven of these, however, he thinks not sufficiently established. The solitary exception is a case recorded by Dr. Walter in the Philadelphia *Medical and Surgical Reporter* for 1862.

"A seaman has recently died at Greenwich from scurvy. He embarked at Calcutta for England in August last, and became affected with scurvy on the voyage, the dietary on board ship not being sufficiently varied. He was taken to the Seamen's Hospital at Greenwich on landing, but expired from syncope on reaching the hospital. Another seaman was also affected, but less severely, and he recovered.

"REPORT OF A CASE OF TYPHOID FEVER IN WHICH ANTIFEBRIN WAS USED SUCCESSFULLY AS AN ANTIPYRETIC AGENT."

To the Editor of The Medical Record.

Sir: The Medical Record of January 29, 1887, contains a letter from Dr. N. E. Jones regarding my article published in that journal of January 1, 1887, bearing the above title. The doctor's plea for the use of your columns is a desire to find out more about the treatment of typhoid fever in New York. He at once, however, launches into the field of bold and undignified assertions, implying that the death of the patient was due to the drug employed. Everything in the way of *bona fide* criticism, which is always desirable and to which no one can reasonably object, is wanting in your correspondent's communication. His reasoning is *post hoc ergo propter hoc*.

The careful observations made and recorded, such as noting the exact influence of the remedy upon the heart, respiration, and temperature after the administration of each dose, the cautious methods adopted in using the minimum quantity to get a certain effect, stopping the administration of the drug at the first indication that there was a tendency to a natural morning remission of the temperature, the death of the patient from *intestinal perforation five days after the remedy had been discontinued*—all these your correspondent passes unnoticed, unmet by any attempt at rational criticism. He will doubtless not deny that typhoid patients may die from intestinal perforation who have not taken antifebrin.

In taking exception to our attempt to control a temperature which was continuous without a morning remission, the doctor asks, "Does anyone know that it is the temperature that destroys the patient? In early days it was not considered true science to prescribe for some prominent symptom, and give no attention to the pathological condition of the suffering organs."

Our close attention to the pathological condition of the suffering organs was the reason for our attempt to control the temperature. Let your correspondent recall the state of the vital organs in two patients who have died from typhoid fever—one where high temperature had predominated, the other where high temperature had not been a prominent symptom. If such an opportunity has not presented itself, let him seize the first, and note the flabby character of the heart, liver, and kidneys of the one and the comparative firmness of these organs in the other. Let him go further, and make section of these organs in their recent state, and carry them to his microscope and note the differences in the parenchyma which open to his view.

This is no time or place to discuss the value of antipyretic agents. Carefully made statistics would seem to leave their value unquestioned. Liebermeister, Gutman, Ebstein, Griesinger, Leibnitz, all who have had excellent opportunities to judge, voice their sentiments, backed by well-collected statistics, in no doubtful tone regarding the efficacy of antipyretic measures.

I pass the query, "Does anyone suppose a rise of the temperature-point necessarily implies an increase of the production of heat?"

The imputation that a desire to advertise a new remedy prompted the article is false. Conservatism in the employment of new drugs and innovations in medicine is wise, but were all as conservative as your correspondent would appear, there would be no progress, and we would still be struggling with the superstition and ignorance of the middle ages. The intention is not to argue for the reckless employment of new remedies; such was not the spirit which prompted the use of antifebrin. The condition of our patient seemed to demand a certain kind of treatment. Antipyrin was rejected because it had not acted well in our hands, and antifebrin was offered to the profession backed by an excellent showing of results. The effect, in our judgment, was more than satisfactory. In the same number of The Medical Record which contains your correspondent's letter, Dr. J. L. R. Wadsworth reports employing it successfully in the treatment of his daughter when the condition of the patient was most unfavorable for any depressant. I have since employed the drug, and thus far have had only good results. Dr. Fordyce Barker tells me he has employed it frequently in four-grain doses with the most flattering effect, and has yet to meet with a bad result. Dr. E. G. Janeway tells me he has employed it in a great many cases in both hospital and private practice, and considers it the safest, most reliable, and certain antipyretic agent we have. No bad results have followed its employment in his hands.

If we are to confine ourselves to the use simply of old drugs and old formulas then is the practice of medicine indeed reduced to empiricism and progress fatally handicapped. A physician should be able to employ any drug, having in view a distinct idea of why he employs it, and know how to interpret the result. A mariner heads his ship into an undiscovered region, but, if he makes careful observations and is competent to utilize such observations, voyages in safety. The surgeon's knife in skilled hands oftentimes safely explores uncertain regions, and as often surmounts difficulties which could not possibly be foreseen. Strong agents like aconite, strychnine, gelsemium, etc., are only satisfactorily employed when careful observation of the effect is made the basis for their use.

To blindly give a drug from an empirical stand-point is often as unwise as it is unscientific, but caution accompanied by an intelligent interpretation of the effect we are getting should enable us to use the most deadly agent with safety. In this way we tried to employ antifebrin, and published our chart. A review of the latter by your correspondent will convince him, I think, that he has misinterpreted our reckonings and misjudged our calculations.

George R. Elliott, M.D.

A doctor's bowling club has been organized in this city. The members are as skilful with the balls as with the boluses, and many a ten-strike results.

THE DANGER FROM ETHER IN NEPHRITIS.

SUUM CUIQUE TRIBUERE.

To the Editor of The Medical Record.

Sir: If only for the sake of adding to the value of my paper, I should have mentioned in my article on "The Dangers of the Administration of Ether in Nephritis and Bright's Disease," published in your issue of January 29th, the valuable and original contributions to medical science by Dr. Thomas Addis Emmett upon this subject, as well as an important paper by Dr. R. Van Santvoord, published in The Medical Record of March 10, 1883. The paper, by Dr. Wesley M. Carpenter, referred to by me, contains extracts from Dr. Emmett's work of great weight relative to this important matter, and though I have not until to-day read in his book what he has there written, his experiences and opinions as I have met with them from time to time in medical journals are well known to me. I believe it incumbent upon me to add as a supplement to my paper that Dr. Emmett was the first one, so far as I can ascertain, to call the attention of the medical profession to a danger now generally recognized, and that we are all greatly indebted to him for this, as well as to his moral courage in publishing the accounts of the cases which terminated so disastrously.

Henry B. Millard, M.D.

February 14, 1887.

Army News.

Official List of Changes in the Stations and Duties of Officers serving in the Medical Department, United States Army, from February 13 to February 19, 1887.

Smith, Joseph R., Lieutenant-Colonel and Surgeon. Detailed, in addition to his present duties, as President of the Army Medical Board in New York City, N. Y. S. O. 38, A. G. O., February 15, 1887.

Tremaine, W. S., Major and Surgeon. Sick leave still further extended four months, on surgeon's certificate of disability. S. O. 39, A. G. O., February 16, 1887.

McCreery, George, Captain and Assistant Surgeon. Granted leave of absence for one month, with permission to apply for one month's extension. S. O. 35, A. G. O., February 11, 1887.

Taylor, Arthur W., Captain and Assistant Surgeon. Relieved from duty at Camp Medicine, Butte, Wyo. Ter., and ordered for duty at Fort Laramie, Wyo. Ter. S. O. 14, Department of the Platte, February 12, 1887.

Wyeth, M. C., Captain and Assistant Surgeon. Ordered from Fort Wayne, Mich., to Fort Barrancas, Fla. S. O. 39, A. G. O., February 16, 1887.

Morris, Edward R., First Lieutenant and Assistant Surgeon. Leave of absence extended twenty days. S. O. 35, A. G. O., February 11, 1887.

Wakeman, William J., First Lieutenant and Assistant Surgeon. Relieved from duty in Department of the Platte, to take effect on the expiration of his present leave of absence, and ordered for duty at Fort Walla Walla, Wash. Ter. S. O. 36, A. G. O., February 12, 1887.

The Abuse of Medical Charity.—It is stated that a few days since a woman dressed in rags applied at the Boston City Hospital for surgical treatment for a scalp wound. The customary search of her person revealed several bank-books, representing $7,100 in Boston banks, $1,000 in bonds, and about $300 in cash—all hidden about her clothing.

Medical Items.

Contagious Diseases—Weekly Statement.—Report of cases and deaths from contagious diseases reported to the Sanitary Bureau, Health Department, for the week ending February 19, 1887:

	Cases.	Deaths.
Typhus fever	0	0
Typhoid fever	9	3
Scarlet fever	47	7
Cerebro-spinal meningitis	3	2
Measles	364	53
Diphtheria	75	37
Small-pox	13	6
Yellow fever	0	0

The Data of the Chin.—The dignified and old-school Medical Record reproves a "thoughtful cotemporary for attempting to establish a philosophic relation between the 'art of medicine' and the fact that a large proportion of the American Medical Association are bald-headed men." It thinks the doctor's beard is "a much more practical problem," is pained to notice that American physicians have a tendency to long beards which, duty prompts it to say, "ought to go"—to go on sanitary and æsthetic grounds, and because long beards are a "characteristic of an undeveloped civilization." All this is severe on the long-bearded M.D.'s, but there is worse a-coming. Hearken to this! "Hardly a doctor of the first eminence in the world's history ever wore a long beard, and he who possesses one may as well concede at once that he will never rise above mediocrity." All the great doctors of old "patronized the barber, and turned the physiological energies that might have been lost in making hair into making brains." What a confusedly crushing and conflicting crowd of ideas these *ex cathedra* enunciations hurl down on the hapless reader! The hygienic question goes glimmering before the great discovery that hair-energy and brain-energy are one. Granting this, it is indisputably true that the doctor who lets his energy go to his chin does so at the expense of his brain. Mark well, ye doctors! subdue your chin-energy, that you may rise above mediocrity! patronize the barber if you aspire to be a shining light! But soft! what lurking heresy is here? The barber cures your chin-energy, and the barber, from far times, has been noted for—chin-energy; *similia similibus curantur*. Interesting as the question is, we cannot pause to discuss whether the closely shaved doctor could be called "hair-brained" or not—probably not, as Shakespeare spells it, "hare-brained." Neither can we now consider that great physiological question that our esteemed contemporary has so suddenly sprung. If not hair, what, then, is that energetic crop that so persistently sprouts on the chin of the doctor who "patronizes the barber" and thereby soars into dazzling professional eminence, *via* the barber-chair? Alas, how The Medical Record has hurled headlong into ruin all the old and accepted data of the chin.—*Hom. Recorder.*

The Central Texas Medical Association held its second quarterly meeting at Waco, Tex., on January 12th. Several new members were elected, an interesting address was delivered by the President, Dr. F. M. Pitts, and a paper on "Typho-malarial Fever," so called, was read by Dr. H. W. Dudley.

Hysterical Speroma Cured by Circumcision.—A correspondent writing from Canada, under the title of "Only a General Practitioner" says: "A young gentleman, aged twenty-one, called on me a few days ago. He prefaced his visit by asking me in a hoarse whisper: 'Are you a general doctor?' Supposing him to mean a general practitioner, I answered in the affirmative. He then stated in the same whisper that he was a victim of

self-abuse, and thought, as such poor devils nearly all think when they get frightened, that he was ruined for life *quoad* virility. I asked him concerning his general health, which he said was perfect, with the exception of this hoarseness. For this, he said, he wished no treatment at my hands, as he was now being treated and had been treated by a specialist for the past few months. The specialist's diagnosis was 'paralysis of vocal cords,' requiring months of further treatment to cure. The treatment was local. Out of curiosity I took him into my dark room and carefully examined his larynx, but could find nothing to confirm our local specialist's diagnosis. As said specialist is also a general practitioner, and specializes eyes, ears, wombs, etc., as well, I may have had my own suspicions from the first—but of this no more. I expressed no opinion to the patient. I then examined his genitalia, and found a long, tight prepuce, with moist, sodden glans, and advised him as a preliminary step to have it removed. He agreed, and next morning I operated. I used ten per cent. solution of cocaine, injecting a few drops in the line of excision. I did this so that he should have the moral benefit of the operation. It was a complete success—so much so, indeed, that I made a mental note in any future operation of a similar character to use cocaine instead of a general anæsthetic. This was my first experience with the drug, except in ligating hæmorrhoid, outside of its ophthalmic use. On visiting my patient a few hours after, I was surprised to find that he had had a copious hemorrhage, which was still in progress, though the wound was quite dry when I had dressed it. But what was more surprising, my patient's vocal paralysis was quite gone, and he spoke as strongly and well as ever. Up to date he has full control of his throat, and sings a very fine tenor. Perhaps you will accept this addenda to our therapeutics and consider it a new remedy for paralysis of the recurrent laryngeal, or you may suggest that throat and genito-urinary specialists should make a combination sometimes."

THE MORTALITY FROM CHILDBIRTH diminishes every year, especially in lying-in hospitals. In the Maternity Hospital at Liège there were delivered, in 1886, 417 cases without a death and with hardly a rise of temperature. Dr. Charles, the director, thinks the result due to the faithful use of corrosive sublimate.

TINCTURA FERRI CITRO-CHLORIDI (TINCTURE OF CITRO-CHLORIDE OF IRON—TASTELESS TINCTURE OF IRON).—

℞. Sol. chloride of iron (U. S. Ph.)..	f℥	4
Citric acid.....	gr.	2,100
Bicarbonate of sodium.....	gr.	2,270
Alcohol	f℥	4
Water .....q. s. ad	f℥	16

Dissolve the citric acid in 4 fluid ounces of water, heat the solution to the boiling-point, and gradually add the bicarbonate of sodium. When effervescence has ceased, add the solution of chloride of iron, and cool the mixture. Then add enough water to make it measure 12 fluid ounces, and finally add the alcohol. Each fluid drachm contains about 7½ grains of dry ferric chloride. Note: This tincture is approximately of the same strength, in metallic iron, as the official tinctura ferri chloridi.—*National Druggist*, September 10, 1886.

COCAINE IN CIRCUMCISION.—Dr. Kingsley, of San Antonio, Tex., writes that in his communication, appearing in these columns under date of November 13, 1886, he did not intend to claim absolute priority in the use of cocaine in circumcision, but only meant to claim that he had performed the operation nearly a year before Dr. Palmer. His object was more especially to illustrate the complete success of the operation in removing a series of distressing symptoms, more the result of a disordered imagination than of any visible pathological condition. Dr. M. E. Alderson, of Russellville, Ky., states that he performed circumcision under cocaine on January 23, 1885, having used the same anæsthetic in an operation for hæmorrhoids on January 5th of the same year. A short time after this he removed the entire second finger of one hand for a gun-shot injury by which the second metacarpal bone was shattered. One-half grain of cocaine was injected on each side of the metacarpo-phalangeal articulation, and the operation was performed satisfactorily, no other anæsthetic being used.

REFLEX SYMPTOMS AND THEIR SIGNIFICANCE.—The *Pacific Record* gives the following symptoms, with their pathological interpretation. Some of these interpretations, however, must be taken with considerable reservation: Swelling under the eyes, grayish, white, or waxy color of the skin, denotes granular (?) disease of kidney. Swelling of the labia, on one or both sides, will accompany inflammation of kidney. Carbuncles on the shoulders, or scapular region (and forearm), are frequently accompaniments of diabetes. Pain, referred to the meatus urinarius, is sure to be the result of cystitis, prostatitis, or nephritis (?). Pruritus of the anus will be the evidence, sometimes, of disease of the prostate. Pain or numbness in the outer part of the thigh denotes some disturbance of the sexual organs, in both male and female. Sciatic neuralgia often (?) depends, in females, on inflammation of the ovary; in men, irritation of lumbar or sacral nerves. Pain in the heels (in females) may be the only evidence of ovarian abscess, while pain and swelling in the mammæ will evince some trouble in the same side of uterus, or Fallopian tube. That shortness of breath, or asthmatic breathing, may indicate valvular disease, or aneurism of the aorta, is probably as well known as that discoloration of the skin may be due to cirrhosis of the liver, or to disease of the suprarenal capsule. Sharp outlines of the facial muscles, a peculiar, querulous look, surely define a dyspeptic, and are not to be mistaken even as the expression of a temporary pain. A dull, aching pain in the *right* shoulder will arise from congestion of the *right* lobe of the liver, while disturbance in the *left* lobe (?), as well as *gastric ulcer*, will give ache, or pain, in the left. Some heart diseases, notably dilatation of the left ventricle, will give pain in the coracoid process, radiating into the left arm; but this pain will stop at a point half-way to the elbow. *Swollen feet* should warn us of some organic disease of heart, kidney, or liver. Hot feet and hands accompany dyspepsia, while a *red nose* will be an indication of *gastric irritation*, either from indigestion or whiskey. But the appearance of the hands is by far the best evidence we possess for instantaneous diagnosis. Not always to be depended on, it is true, as an entity, but, corroborated by other symptoms, will hardly fail. Dr. Watson first noticed a club-shaped form of the ends of the second and third digits as pathognomic of tuberculosis. Finger-nails, white at the points and purple at the base, *always* accompany the chills of malarial fever. A white appearance of the fingers in contrast with the back of the hand, will denote a very torpid condition of the bowels. A yellow tinge in the palm or under the finger-nails, produced by pressure, will indicate torpidity of liver.

NERVOUS DEPRESSION AND THE DEVELOPMENT OF CANCER.—Dr. George H. Rohé, in the Philadelphia *Medical Times*, writes: "It looks very improbable at first sight that new-growths, especially cancer, should be rationably attributable to the influence of nervous depression. However, so acute an observer as Sir James Paget seems to incline to the view that such a relation may possibly exist. Snow states that of one hundred and forty cases of mammary cancer analyzed by him, 'one hundred and three gave an account of previous mental trouble, hard work, or other debilitating agency.' Of one hundred and eighty-seven cases of uterine cancer, nearly one-half (ninety-one) gave a similar history. A number of detailed histories given by this author seem

to bear out the claim that mental depression (neurasthenia) is a frequent cause of cancer. Arndt is positive that neurasthenia is an etiological forerunner of cancer, and relates three illustrative cases. Willard Parker states that 'there are the strongest physiological reasons for believing that great mental depression, particularly grief, induces a predisposition to such a disease as cancer, or becomes an exciting cause under circumstances where the disease had already been acquired.' In over one-fourth of Parker's cases of cancer of the breast (one hundred and six out of three hundred and ninety-seven), nervous depression or conditions directly leading to it are set down as forerunners of the disease. Cooke points out the fact that in women cancer occurs, on an average, ten years earlier than in men, coinciding in the former sex with the menopause, and in the latter with the period of greatest exhaustion of the nervous system. He remarks that 'the women of fifty are very generally more worn and wasted than the men of seventy.' It is between the fiftieth and sixtieth years that neurasthenia from professional overwork is most frequent. The merchant, official, or professional man is reminded that he cannot do the same amount of work at fifty that he could at thirty; in the words of a distinguished Philadelphia teacher of the last generation, 'he cannot get a three-minute pace out of a four-minute horse.' Jonathan Hutchinson says, upon the same point: 'We shall probably be not far from the truth if we admit senility of tissues, local or general, to be the one predisposing cause of cancer with which we are acquainted. . . . A little step further may next be taken, in the belief that everything which hastens senility, either local or general, will increase the predisposing influence, and in this category may be placed anxiety, distress, overwork, and excesses of all kinds. It is highly probable that under such conditions a state involving increased proneness to cancer may be induced, and, further, that if offspring are produced after that state has been developed, they will inherit that tendency.'"

THE INDIAN AND PHYSICAL PAIN.—The general idea that the Indian endures pain stoically is not sustained by the observations of Dr. Corbusier among the Apaches. He says that "they do not endure physical pain any better, if as well, as the whites. Great or continuous pain renders them stupid, and oftentimes delirious, and the stolidity with which Indians in general are credited is not well maintained by them under small surgical operations, the one of tooth-extracting almost always eliciting a groan or a yell. The expression of their faces cannot always be seen on account of paint and their long hair, but when not concealed by these, the changes induced by the emotions may readily be detected; anger is almost always betrayed by the expression of the eyes; fear by the dirty grayish color the skin assumes; surprise by suddenly drawing in a breath as if gasping, and sometimes also by covering the mouth with one hand."

THINKING AND WORKING.—In our present system of education—now happily passing away for a better one—we want one man to be always thinking and another to be always working; and we call the one a gentleman and the other an operative; whereas the workman ought often to be thinking and the thinker often to be working, and both should be gentlemen in the best sense. As it is, we make both ungentle, the one envying, the other despising, the other; and the mass of society is made up of morbid unhealthy thinkers and miserable workers. It is only by labor that thought can be made happy; and the professions should be liberal, and there should be less pride felt in peculiarity of employment, and more in the excellence of achievement.—*The Popular Science News.*

THE RATTLESNAKE TREATMENT FOR THE RELIEF OF PAIN.—Dr. William H. Corbusier, in an article on "The Apache-Yumans and Apache-Mojaves" (*American Antiquarian*), says: "The Apache-Mojaves sometimes resort to the Tonto medicine-men to receive the rattlesnake treatment for the relief of pain. At the Agency, one day, the rattling of a snake attracted my attention, and on approaching a group of Indians from which the sound seemed to proceed, I found a medicine-man squatting down holding a large rattlesnake in his right hand, the thumb and index finger of which encircled it close to its head, while he gently stroked its back with his left. Presently an old man advanced to him, and, saying he had a pain in his head, squatted on the ground. The medicine-man arose, and, placing himself behind his patient, coiled the snake around his head, and, while holding it there, uttered a guttural chant, occasionally causing the snake to vibrate its rattles. He then quickly uncoiled the snake and swung it head foremost away from the man's head, at the same time making the sound *wisht*. The man then pointed to his right arm, and the medicine-man laid the snake along the limb, its head resting on the hand. He chanted again, caused it to rattle, and swung it away as before. The old man arose, and with a satisfied air walked away. Other patients succeeded him, to have the snake laid on various parts of the body. After a time the medicine-man rested the snake on the ground again, and, still retaining his hold of it with his right hand, put a pinch of yellow pollen into its mouth with his left, and rubbed some along its belly. He then held his hand out to a man, who took a pinch of the powder and rubbed it on the crown of a boy's head. Yellow pollen treated in this manner is a common remedy for headache, and may frequently be seen on the crown of the head of men and boys."

ULCERS OF STOMACH IN INFANTILE TUBERCULOSIS.—At a recent meeting of the London Pathological Society, Dr. Barlow showed a specimen of tubercular ulcer in the stomach of a child twenty-one months old, affected with general tuberculosis. It was situate near the cardiac end in the great curvature; had undermined edges, but no thickening around. There were also follicular ulcers at the mid-point of the great curvature, and two near the pylorus. In the first ulcer there was a minute elevation under the mucous membrane, which might have been a miliary tubercle, but had not yet been searched for bacilli. The interest of the case lay in the relation of the small tubercle to the ulcer. Small ulcers of the stomach had been found in adult phthisis. Louis said he had never once seen anything like tubercle in these, and Andral had only once found tubercle of the stomach. Of 146 cases of tuberculosis in children, Barthez and Rilliet found 21 with the stomach affected, and in 7 of these there were miliary tubercles. They had no doubt that the ulcers were caused by tubercle. He had seen two other cases of this kind, but not with miliary tubercle in their base.—*The Lancet*, January 1, 1887.

MORTALITY IN CHILDBED IN PUBLIC INSTITUTIONS IN GERMANY FROM 1874 TO 1883.—Dr. R. Dohm has collected statistics of 104,287 cases of labor in the public institutions in Germany during the ten years named (*Medical Press*). The mortality was 1.37 per cent., or not one-half of what obtained in the pre-antiseptic age, when it was reckoned at 3.4 per cent. The tables also show that the lowest mortality is in the lying-in hospitals in which no teaching work is carried on (0.56 per cent.). The middle grade of mortality is in hospitals in which midwives are trained (1.13 per cent.), while the mortality of institutions to which students are admitted is 1.90 per cent. As is pointed out by the author, however, this may be accounted for by the fact that pathological cases are attracted to these institutions. The truth of this would seem to be borne out by the statistics of the Royal University Women's Klinik, Berlin, tabulated by W. Bokelmann. In that hospital puerperal eclampsia occurred once in every 49 cases (average 1 in 500), placenta prævia 1 in 88 (average 1 in 400 to 500), rupture of the uterus 1 in 195 (against 1 in 527 and 1,722 in Tübingen and Munich, and 1 in 5,664 in the Berlin Charité).

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Original Articles.

ON THE CURE OF REDUCIBLE AND IRREDUCIBLE HERNIAS BY HEATON'S INJECTION METHOD AND BY RADICAL OPERATION.[1]

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Two years before the publication by Dr. George Heaton of his little book on the cure of rupture, etc.,[2] in 1877, I had seen two patients who had been cured by him, by a then unknown method of subcutaneous injection. The satisfactory result was confirmed by the inspection of the parts formerly the site of the hernias. I was consequently easily led, on the announcement of this long-concealed method, to test its efficacy, and soon had an experience sufficiently large to come to the conclusion that it was, as asserted, a reliable procedure, but to a much more limited degree than its introducer and his immediate disciples claimed.

This procedure consists, as is well known, in injecting, by a syringe with a larger and longer point than in an ordinary hypodermic syringe, into the cellular tissue of the inguinal canal, and after the reduction of the hernia, some ten to twenty minims of a mixture of half an ounce of Thayer's fluid extract of white-oak bark, thickened properly with the addition of fourteen grains of the solid extract of the same bark; to this was also put half a grain of morphine to allay the pain sometimes created. This mixture—or its modification by Warren of adding to ℥ss. of Heaton's oak-bark mixture, evaporated to the thickness of glycerine, ʒj. absolute alcohol, and ʒj. sulphuric ether, and 2 grains of sulphate of morphia—was intended to effect a mild inflammatory thickening of the part to which it was applied, with a subsequent organization of new connective tissue, and thus to block up the hernial passage.

In carrying the injection into the inguinal canal, it was directed by Heaton that the left forefinger should be pressed perpendicularly into the external ring, in such a way as to crowd the spermatic cord to the inside, and thus to feel distinctly the external edge of the opening. The needle of the syringe is then to be forced through the ring and obliquely upward into the canal toward the region of the internal ring, and as it is withdrawn the mixture is to be injected, and at the same time the point of the needle moved in various directions, so as to smear with the fluid as large an area as possible. Arrived again at the external ring, the needle should be withdrawn suddenly, in order to prevent the injection affecting the subcutaneous tissue. A firm compress is then to be applied and the patient kept in bed for a week or ten days, depending on the amount of tenderness produced. At the end of this time the patient is generally able to go about, guarded for two or three months by a compress and bandage or by a light truss. Tests by coughing, etc., should not be resorted to until considerable time has elapsed. A conical compress made of multiple layers of rubber adhesive plaster can be more easily kept in place than an ordinary muslin one. Should the hernia reappear, a second, third, or fourth injection may be made.

In the first twenty-eight cases[1] in which I performed this operation, the results were uncertain and unsatisfactory; in these I had but eight cures, and a majority of these required more than one injection. Although it seems like an easy procedure, yet I found at first considerable difficulty in successfully planting my injection in the canal. Plunging the needle perpendicularly into the external ring sometimes led to its point being caught in and penetrating the external pillar, or even to its sliding out of the ring into the adjoining cellular tissue, or to its impinging at times on the cord, thus producing great pain, and occasionally epididymitis. To avoid these contretemps I first tried to thrust the needle into the external ring alongside the finger, after having invaginated the scrotum, from below; which manœuvre I found apt to be followed by a long indurated cord; and even when successful the canal was invaded only to a very limited extent, from the needle being too short for such a procedure. Even when experience had led me to the method of operating which I now use, the natural fear that I should, by pushing the needle in too far, inject the fluid into the peritoneal cavity, deterred me for some time in carrying the injection to the deeper part of the inguinal canal. In only one of my seventy-two cases did, however, this accident happen, and it did no harm, and, in fact, was not recognized until the death of the patient, four months later, from another disease, revealed that the injection had been carried into a mass of omentum which had not been completely reduced.

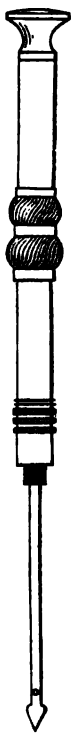

FIG. 1.—Heaton's Syringe, modified.

Nowadays, after altering the syringe devised by Heaton[2] so that its needle part is longer and stouter (as is here seen), and also adding to it a collar of roughened metal about its middle (see Fig. 1), I have used it in inguinal hernia in the following way: The patient is placed on a table with the hips slightly elevated; the hernia is reduced (though probably the sac cannot often be pushed up) and the ring identified as has already been described. Then the needle is carried through the skin alongside the end of the finger with a rotatory motion, avoiding in this manner anything like a thrust, until the ring is reached, or thought to be reached. The finger which had marked the external ring is now used to invaginate the scrotum and to recognize the situation of the needle-point, and to guide it as it is depressed and pushed upward and outward by the other hand. If not already determined by a preliminary examination, the length of the canal can often be estimated before the final discharge of the fluid takes place. I have many times been able to appreciate that the needle has gone through the intercolumnar fascia by a perceptible jump or jar, and this is of moment, for this fascia can be sometimes pushed upward to quite an extent, and if the fluid be then forced out it will, on the taking away of the needle, be found to be entirely external to the ring.[3] Mastering these de-

[1] Read at the meeting of the State Medical Society, February 2, 1887.

[2] The Cure of Rupture Reducible and Irreducible; also of Varicocele and Hydrocele, by New Methods. By George Heaton, M.D. Edited by Dr. Henry Davenport. 1877.

[1] Reported in THE MEDICAL RECORD of November 11. 1882, p. 551.

[2] At one time I employed De Garmo's guarded needle, but have been more pleased with the modified Heaton needle, as described in the text.

[3] Dr. Abbe has lately, with advantage, pushed the needle into the canal by purposely puncturing above the ring, guiding it by a finger of the other hand invaginating the scrotum.

tails, the operation became an easy one. But moderate pain is occasioned, and suppuration has in none of my cases occurred, and in but three or four adult cases was an anæsthetic required. If successfully applied, at the end of a week a hard plug, the size and shape of the end of the finger, can be felt through the abdominal walls or by invaginating the scrotum. This mass I have had the opportunity of inspecting in two hernias submitted subsequently to the radical operation, in one case three weeks, and in a second case eight months, after Heaton's injection had been practised. They formed brown masses of firm connective tissue, easily recognizable, and amply sufficient in size, had they been rightly placed, to block up the canal of a small hernia.

The outcome of my personal experience with this method can be summed up in a few words. The most satisfactory results have been had in inguinal hernias of small size and of tolerably short duration, that is to say, in those having an inguinal canal yet oblique. In larger and older hernias the use of a single or repeated injection will often so narrow the canal as to permit the easier use of a truss, and so allow of the better carrying on of a vocation. Moreover, the procedure is a perfectly safe one. Figures will, perhaps, be serviceable in appreciating these conclusions.

I have myself performed this operation altogether seventy-two times; those in private practice being in selected cases, but in hospital practice often in large hernias occurring in patients refusing the radical cutting operation. Of the 72 cases, all but 8 were for inguinal hernias. Of these 8, 3 were femoral hernias, with one cure; 2 umbilical, both failures; and 3 ventral ruptures, all cured by a single injection. Of the 64 inguinal hernias thus treated there have been 35 cases whose progress has been traced beyond eight months from the time of the operation, and of these there are 12 cases of cure; and in 8 of them it is further known that they are yet well in varying periods from two to five years. This would give a success of a little over thirty-three per cent. This is a somewhat better result than is given in the reliable reports of Bull [1] and Gay.[2] These observers give a total of 36 cases, with 9 cures, or twenty-five per cent. of recoveries. This discrepancy is explicable by the circumstance that not only have the more recent trials been largely restricted to the smaller hernias, but especially has success been achieved by me in four instances in children under ten years of age, in whom the long use of a truss had failed to relieve the hernia. A single injection under ether in each instance effectually controlled the hernial descent. Adding to my own figures, therefore, those of the above observers, 71 cases are obtained, with 21 cures, or a percentage of 29.5.

These statistics give a less encouraging outlook for this simple procedure than is furnished in a recent paper on this subject by Dr. W. B. De Garmo,[3] who states somewhat vaguely that the success obtained by him amounts to about forty-five per cent. Dr. De Garmo, however, calls attention to a condition not yet mentioned, in which Heaton's injection can be applied with benefit, and though properly belonging to the second division of the subject, can be alluded to here. It is that when recurrences take place after the radical operation for the cure of a hernia, they appear generally as comparatively small protrusions; these, and also small hernias of original formation can, sometimes, be treated successfully, and without compelling the patient to go to bed, by injecting five to ten minims of Heaton's fluid into the canal, after having had adjusted and worn for a short time previously a lightly applied truss. The amount of irritation sufficient to plug up the opening can, in this way, and while continuing the use of the truss, be accomplished by one or more repetitions, and yet allow the patient to attend without interruption to his business. I have resorted to this three times with benefit. I have not had any experience with Schwalbe's alcohol injections, concerning which this surgeon reports [1] 34 cases cured by this plan of treatment, but does not give the total number treated by him. He injects repeatedly (and this is important not only in this method, but also in Heaton's) a twenty to seventy per cent. mixture of alcohol and water; but Ranke, in the discussion that follows, stated that in over one hundred cases treated by him great pain was occasioned by the injections, and that it did most good in children and in small hernias in adults.[2]

From the foregoing statements it will be seen that there is but a comparatively limited range in the application of the injection method in the treatment of hernias. Indeed, one may say the very safety of this method allows it to be used in cases that should never be treated with the knife. But there is a very large number of old reducible hernias of considerable size, which are often painful and unsightly, and not always to be kept up by a truss, together with those that are more or less irreducible, and which oftentimes materially interfere with the pursuit of a livelihood, and which by temporary incarceration frequently threaten life, that appeal for surgical help. Although under the influence of antiseptic surgery, Steele, an English surgeon, was, in 1874, the first one to perform the radical operation for a large inguinal hernia, by suturing the ring after it had been exposed by an incision; yet it is rather to the efforts of Nussbaum and Riesel, in 1876, and of Czerny, Socin, and Schede, in 1877, that the credit is due of placing this operation on a firm footing in surgery. Since that time the exhaustive brochures of Leisrink [3] and Ségond [4] have collected and digested a large number of cases. To their figures can now be added a third collection, made by Joannes Andaregg,[5] an assistant of Socin's, in the Glarus Hospital. In this manner a total of 273 cases has been arrived at; but before considering the results obtained statistically, a description of the operative procedures adopted should be given. They consist, in brief, 1, in the antisepic exposure of the ring and upper part of the hernial sac by an incision three or four inches long; 2, the reduction of the hernial contents—if this is possible the sac is not opened; 3, the separation of the sac at its neck, and the ligation of it as high as possible after forcibly drawing it downward; 4, the cutting off and removal of the sac, unless the hernia be a congenital one, when a portion is left to be sutured so as to form the top of a tunica vaginalis; and finally, 5, the sewing together of the ring and a portion of the inguinal canal. The wound is thereupon drained, and more or less tightly closed and dressed. A few comments may be made on the various steps of this operation, and their possible variations and complications.

The exposure of the sac and treatment of its contents.—In coming down on the hernia, after rendering the parts aseptic by shaving, scrubbing, and disinfecting, more certainty will be attained and less delay produced, by deepening the incision, after going first through the skin and fat above the external ring until this latter is definitely made out and exposed, when the hernial sac can be more quickly and easily reached by tearing through the connective tissue at this point with two forceps, and its neck more readily encircled by the finger than by any other way. By stripping it now downward, it can often be peeled throughout from its attachments with great facility, and the more rapidly the sac is reached and lifted out of its bed, the less likely is suppuration to occur. In this way, also, is the detachment of it from the spermatic cord best accomplished. Occasionally this latter is by no means an easy task, especially in the congenital hernia, in which it is well known the peritoneal layer is more

[1] The Medical Record, November 11, 1882. [2] Ibid., April 1, 1882. [3] Ibid., January 8, 1887.

[1] Centralblatt f. Chirurgie Beilage, 1882, s. 59.
[2] Keetley, of London, conjoined with the radical operation smearing the ring and inguinal canal with Heaton's fluid, but has recently abandoned this plan of action.
[3] Die Moderne Radical-operation der Unterliebsbrüche, 1883.
[4] Cure Radicale des Hernies, 1883.
[5] Die Radical-operation der Hernien, Deutsche Zeitschrift, f. Chirurgie, 1886, Bd. 24, Hft. 3 u. 4.

intimately connected with the cord. The method of making a new and complete tunica vaginalis, already spoken of, has succeeded happily in my hands in two cases, the testicle moving freely in its finished sac. In a third case, instead of suturing the cut-off hernial canal or sac it was left open, and a drainage-tube carried out through the bottom of the scrotum; but this I deem, when the suture is used, unnecessary.

If it is possible to force the intestine or omentum in reducible hernias into the sac by pressure on the belly above, before the incision is begun, it should be done, as it not only renders the operation easier, but also allows one often to put in practice what I consider a proper surgical precaution, viz., the excision of the omental part of a hernia, which, by its abnormal length, tends to produce relapses. This point is not conceded by all surgeons, though in the cases where a mass of omentum has become irreducible by adhesions or by long dwelling in a sac, or where the omentum has undergone inflammatory or nutritive changes, there is no question now as to the proper treatment. In all such cases the omental mass is to be removed. This adds, it is true, somewhat to the risk of the operation, according to Andaregg increasing it by two per cent.; but as this risk is shown to be largely from a preventable cause, namely, hemorrhage, it can be thrown aside if certain precautions are observed. In the total collected cases of Andaregg, MacEwen, Banks,[1] Abbe,[2] and my own, amounting to 379 cases, there were 5 deaths from this source—hemorrhage. I have not had this mishap terminate seriously; but had I not adopted the precaution, which now I beg to present to you, I should have contributed possibly to this list of mortality. I had tied off, in several portions, with silk suture, which for this purpose is much safer than catgut, a mass of omentum, and had left attached to the remaining stump, after the removal of the herniated portion, the long ends of this ligature, to pull it out again from the abdomen in order to make a final inspection of it prior to closing the wound. And it was fortunate that this was done, for it revealed that quite a smart hemorrhage was going on from a portion of the omentum that had slipped at the edge of the flattened pedicle. An extra turn of silk around the whole mass made everything tight, and the further history of the case is given below.

CASE I.—*Large irreducible congenital hernia (twenty-seven ounces); omentum cut off; Nussbaum's operation; cured.*—E. S——, aged thirty-two. He had from early childhood an irreducible tumor in the left side of the scrotum, which is now the size of a cocoa-nut, and is believed to be omental. Two years previously, during an attack of gonorrhœal epididymitis, swelling and fluctuation appeared, for which aspiration was resorted to, and three ounces of fluid withdrawn with benefit. Now the size of the hernia is so great that not only is its weight much complained of, but also its appearance subjects him to much mortification. April, 1884, under ether, an incision four inches long was made from over the internal ring downward and inward toward the scrotum, the sac reached and opened, and found to contain omentum mainly, with a single loop of small intestine three inches long. A number of adhesions existed, which were detached after being previously ligated. The intestine having been returned to the abdominal cavity, the portion of omentum corresponding to the neck of the sac was perforated and tied in three portions with heavy silk, and cut off. Some hemorrhage took place from the omental stump, which was recognized and demanded an extra ligature. The mass removed weighed twenty-seven ounces. The omental stump, with its ligatures still long, and guarded by a clamp attached to them, was allowed to drop into the peritoneal cavity, and the opening temporarily closed by an antiseptic sponge held in a long clamp. After this the sac was stripped from its connections, and in so doing the bare testis was lifted up, and proved thus the case to be one of congenital hernia. The lower part of the sac was, therefore, cut across, and the inferior mouth sewn together to make a proper tunica vaginalis. The upper part of the sac after the omentum had been finally inspected and its long ligature ends cut away, was now pulled down as far as possible and tied securely, as near as one could to the peritoneal level, with strong catgut. The part outside the last ligature was then cut off and removed, and the wound finally closed after a drainage-tube had been carried from the external ring outward, and another from the new tunica through the bottom of the scrotum. No attempt was made to sew together the external ring. Full antiseptic precautions were carried out during the operation, and similar dressings were snugly applied over the wound. The progress of healing was without note. Considerable pain, and temperature 101° for first twenty-four hours, after that normal. Patient got about in three weeks, wearing a loose truss, which he left off in six months. Hernia cured until March, 1886, when a slight bulging was noticed, size of a pigeon's egg, for which an injection of Heaton's fluid, five minims, was twice made, one week apart, the patient continuing at his business and wearing a truss all the time. Since then he has been able to omit a truss, and no recurrence has taken place.

The tendency to slipping of the outer edges of the omental pedicle, and of splitting an omental vein in transfixing it, can be guarded against by tying the mass in several sections, the outer ones being rather small, and finally encircling the already tied pedicle with a final turn of silk, tightly tied. Securing it in this manner, and making a final inspection before cutting short the ligatures and tying the hernial sac will, I fully believe, do away with this risk. Furthermore, if the sac should not be immediately tied off after the omental section or replacement of adherent intestines, the peritoneal opening should be temporarily plugged by an antiseptic sponge held securely in a clamp. This is important as it also prevents any fluid, blood, etc., running into the peritoneal cavity.

The formation of a complete tunica vaginalis is illustrated in

CASE II.—*Strangulated congenital inguinal hernia; ligature of sac.*—W. K——, aged sixteen, operated on December 16, 1884. Three days previously, while lifting, a painful swelling appeared in right groin, which soon descended to the scrotum; vomiting soon came on and has persisted to the present date. His condition when observed was fair; temperature 98°; pain great; vomiting not stercoraceous. He was immediately etherized and taxis mildly employed. This failing, an incision down to and into sac was made, revealing a loop of small intestine deeply congested. Constriction was mainly at external ring, and less so at internal opening. These were nicked by a straight, blunt bistoury, intestine replaced, and sac tied and cut off as high up as possible, and again tied at a lower level to make a tunica vaginalis, for the hernia was a congenital one. No sutures to external ring; two rubber drains inserted, one into external ring and one at lower angle of incision. In six days primary healing, except at tube openings. Discharged from hospital, with a pad over external ring, and directions to procure a truss and wear it.

It may happen that such dense adhesions exist of the sac to the cord that a portion of the former must be left. This is of no moment if sufficent of the neck of the sac remains to be tied off; but adhesions of the intestine to sac-wall may at times be so extensive and so intimate as to preclude their dissection. Another interesting peculiarity was met with in

CASE III.—*Double scrotal hernia; contents of left side of large intestine simulating adhesions.*—W. S——, aged sixty-two, with a large double scrotal inguinal hernia of twenty-five years' duration, with rather large rings, inter-

[1] Banks: Notes on the Radical Cure of Hernia, Medical Times and Gazette, July 5, 1884.
[2] Abbe: On the Radical Cure of Hernia, read before the Medical County Society, New York, January 25, 1886.

fering with patient's business as a pedler. Heaton done on both sides, February, 1885; left one soon returned, and injection was repeated as patient declined radical operation. The right hernia remained cured, but left one returned fifteen months later, right one still remaining up. Radical operation done on the left side, May 22, 1886. Three-inch incision, ring carefully exposed on upper surface, and as intestinal contents of sac were apparently adherent, it was opened, when it was discovered that it was a herniated large intestine, with its adjacent parietal peritoneum. This was returned as far as possible, after stripping up the sac, into the abdominal cavity, and the ring, which was large, admitting three fingers, was carefully brought together with three silver-wire sutures, and wound packed with iodoform gauze and allowed to heal from bottom to get a more solid cicatrix.

Patient eloped from hospital with sinus at operation wound, June 9th, and has not since been heard from.

Banks [1] reports a case similarly treated, with a good result, and gives a caution against mistaking the condition for intimate adhesions and thus acting erroneously.

In another case where the adhesions were broad and close, a strip of the sac was put back attached to the intestine without mishap.

The complication of an undescended testis associated with a hernia was encountered in the case next presented.

CASE IV.—*Reducible inguinal hernia; MacEwen's operation; removal of an undescended testis.* — B. E. T——, aged twenty-five, had a hernia in right scrotum which has existed nearly twelve years, and which cannot be controlled by a truss. It is painful, and he asks surgical relief. The swelling is the size of a goose egg. Testicle on right side wanting.

Operation November 6, 1886.—Hernia sac contained intestine and an atrophied testis, which lodged, when reduced, in the inguinal canal. This was only one-half the size of a normal testicle, and it was drawn down and its cord tied off with catgut. The sac was then stripped up to internal ring, and the parietal peritoneum peeled off for a space of one and a half inch above the ring, and the sac, crumpled up by a catgut cord piercing it to and fro several times, was drawn up into this space and secured by carrying the terminal portion of the cord through the abdominal wall muscles. The pillars of the ring, as high up as possible, were then sewn together as advised by MacEwen, and the upper half of the wound left to heal by granulation under a packing of iodoform gauze, the lower portion being closed by two gut sutures. Progress without temperature; by December 9th he had left the hospital, wearing a sticking-plaster compress, and up to date of January 15th is free from recurrence.

A further direction is necessary relative to omental adhesions existing at the neck of the sac, or mouth even; they should be separated carefully by the finger, so that the stump can drop freely into the peritoneal cavity, or else you may have an inclined plane of this tissue directing intestine or other omental masses toward the closed aperture. Indeed, it is for this reason that Banks advises, in all instances, the opening of the sac, so as to explore it and to satisfy one's self in this way beyond peradventure that no small mass of adherent omentum at the mouth should escape detection and liberation. Individually I have found that it is not necessary to open the sac when it has been found empty or its intestinal contents have been reduced by palpation, with or without invagination of it. I have been fully able through its thin walls to determine whether the mouth is free, and particularly is this so in the more liberal manipulation of the sac now practised in the method recommended by MacEwen,[2] and which will shortly be detailed.

The treatment of the sac.—Usually, as practised by the German surgeons, I have, after separating the sac from its connections, pulled it down as far as possible and tied it, without transfixion, with a heavy catgut ligature (see Fig. 2), with only once a slipping, from cutting the sac beyond too close to the ligature; the open ring of peritoneum was in this instance seized with a forceps, gathered together and tied higher up. This pulling down and tying the sac off at the peritoneal level has, as is known, the intent of obliterating the funnel-shaped depression at the internal ring and thus to prevent the tendency to relapse; but the few post-mortem examinations made some time after such an operation have shown that this is not always successful. Ségond has collected six such observations (Schede, Riesel, Weinlechner, Reverdin, Czerny, and Esmarch). In three of these there was either a dimpling in of the peritoneum sufficient to admit the end of the little finger, or a funnel-shaped depression or radiated folds of peritoneum found at the internal ring. In all, however, was the canal completely obliterated. A corroboration of the complete occlusion of the canal and internal ring I can offer in the history of Case V., who died of pneumonia and chronic nephritis twenty-two days after the operation, but with her wound practically healed.

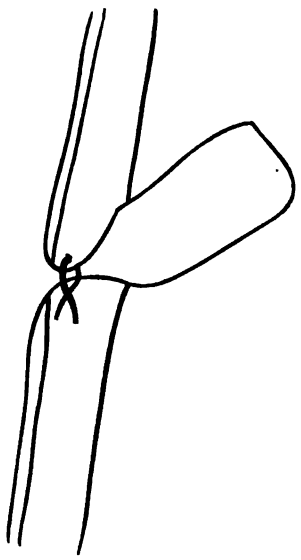

FIG. 2.—Tying Neck of Sac close to Internal Ring. (Nussbaum, Czerny.)

CASE V.—*Large incarcerated inguinal omental hernia.*—M. S——, aged sixty, entered the New York Hospital October 1, 1886, with an omental hernia of the right inguinal region nearly eight inches in diameter, which had existed for ten years, but which had become irreducible within the past seven days. There was some heat and swelling present, with fluctuation in the swelling. On aspiration several ounces of bloody serum were withdrawn. No constitutional symptoms of strangulation.

October 9th.—Mass was split open and eight ounces of bloody serum evacuated, and a quantity of omentum, weighing three hundred and sixty-six grammes, inflamed and hardened, tied, with a strong silk ligature in two places, and again by a third silk ligature encircling the whole. It was then cut off beyond these ligatures and removed. The thickened hernial sac was also removed after high ligation. The ring was sewn up with heavy catgut as high as possible, and the wound closed, after being duly drained, with antiseptic dressings. It did well, and by the 27th only a slight ulcer at site of tube was left, and patient was sitting out of bed.

October 28th.—Slight chill, temperature 102°, and examination of chest showed pneumonia to be developing, which, with the chronic Bright's disease she had, caused death on 31st.

The peritoneum showed, on section through the operation wound in the abdominal walls, everything solidly united, and in the abdominal cavity the omentum was tightly united to the parietal peritoneum about the internal ring, and also to a portion of ileum and large intestine. The internal ring in being dissected was found also closed.

The frequent recurrences or relapses after the radical operation for hernia, however, show that its technique is yet far from perfect. Andaregg, whose collection of results is the best observed, gives 105 cases under his own observation where the patients have been inspected from periods ranging from seven months to seven years, with 64 definite cures, or sixty-one per cent. Of the 41 cases that relapsed 29, or thirty-nine per cent., took place in the first year, 8 in the second year, and the rest later. The

[1] Cit. supra.

[2] Cit. infra.

relapses were usually slight, and had little disposition to increase, and were easily controlled by a truss; with large old hernias and double ones relapses were more frequent. The above figures, however, embrace radical operations done in both strangulated and non-strangulated hernias. A further examination is therefore necessary, and shows that in 41 cases of non-incarcerated inguinal hernias there were 21 relapses, or fifty-two and one-half per cent., and in 6 cases of femoral hernia there was 1 relapse, or 16.6 per cent., certainly a less encouraging showing than the first grouping of figures. Rather remarkable, too, is the circumstance that in strangulated hernias, while the employment of the radical operation does not materially increase the risk, it adds decidedly to the chance of a complete cure of the hernia, as the relapses were only twenty-seven per cent. in a total of thirty-three inguinal hernias. Out of my own 21 cases in which the radical operation has been done, including 4 cases of strangulated hernia, I have been unable to trace more than 11 of them beyond a period of eight months, owing to many being hospital, *i.e.*, migratory patients; of these there were 8 cured. Neither do I find assistance on this point in the interesting papers of Banks and Abbe, already alluded to. It must be confessed that the frequent recurrence of a hernia after the radical operation justifies the opinion of Ségond, that "it is an operation which in the majority of cases only triumphs over an irreducible or unmanageable hernia, and renders it controllable."

The latter part of this dictum is corroborated by Leisrink, who shows that eighty per cent. of the relapsed cases have marked improvement in their hernias from the operation, and he therefore advises surgical interference on this ground. An improvement in the mode of operation, with a corresponding increase in the percentage of cures, has quite recently been published by MacEwen,[1] of Glasgow, by which, in 25 cases of free inguinal hernias that were under observation from periods varying from eight months to five years (17 were over one year) there were only 9 relapses, or thirty-six per cent.

MacEwen has had also a corresponding success when joining the radical operation to the treatment of a strangulated hernia, and gives 23 cases (14 inguinal and 9 femoral), with 1 relapse, or 4.3 per cent., the cases continuing under observation from eight months to four years after the operation. This is, indeed, a decided improvement in the cure of the affection under consideration, and is apparently accomplished by two deviations from the usual treatment, the first of which is his peculiar treatment of the sac. Instead of tying this and cutting it off after separating it from its attachments, and after emptying it of its contents, he secures it, in his own words, by "a stitch firmly at the distal extremity. The end of the thread (catgut) is then passed in a proximal direction several times through the sac, so that when pulled upon the sac (see Fig. 3) becomes folded on itself like a curtain. The free end of this stitch, threaded in a hernial needle, is made to traverse the canal and to penetrate the anterior abdominal wall about an inch above the internal ring, the wound in the skin being pulled upward so as to allow the point of the needle to project through the abdominal muscle without penetrating the skin. The thread is relieved from the extremity of the needle when the latter is withdrawn. The thread is pulled through the abdominal wall, and when traction is made upon it, the sac wrinkling upon itself is thrown into a series of folds, its distal extremity being drawn farthest backward and upward. An assistant maintains traction upon the stitch until the introduction of the sutures into the inguinal canal, and when this is completed the end of the stitch is secured by introducing its free extremity several times through the superficial layers of the external oblique muscle. A pad of peritoneum (see Fig. 4) is thus placed upon the abdominal side of the internal opening." To accommodate this wrinkled-up pad MacEwen previously strips up the parietal peritoneum for half an inch around the whole abdominal aspect of the circumference of the internal ring. This peritoneal pad, made up of wrinkled-up sac, is supposed to constitute a boss or bulwark, with its convexity presenting backward toward the abdomen, while its base rests on the abdominal walls surrounding the circumference of the internal ring. This not only protects the internal ring, but sheds the intestinal wave backward away from the opening.

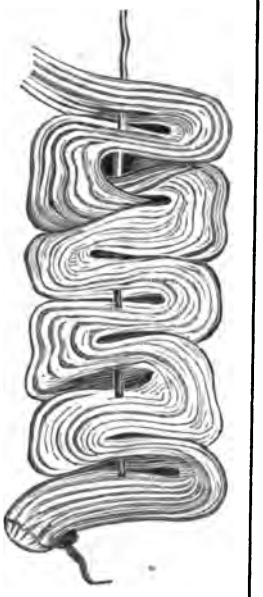

Fig. 3. — Folding Up the Hernial Sac. (MacEwen.)

Fig. 4.—The Subperitoneal Tucking Up of a Folded Hernial Sac. (MacEwen.)

My own experience with this procedure embraces only six cases, and the results are too recent to determine for myself its value. In all but one case it was easy to accomplish the desired reposition, and in one patient who had previously submitted to the radical operation after the usual method of pulling down the sac, tying it off, and suturing the external ring, the statement made by him that after the last operation (MacEwen's) "he felt tighter than he had done for years," testifies in its favor.

The closure of the ring or canal. — Socin[1] does not consider the suturing of the ring of special advantage, and apparently proves it by showing that in 39 cases of inguinal hernia where no suture was used there were 16 relapses, or thirty-eight per cent., and that in 32 cases where it was used there were only 12 relapses, or thirty-eight per cent. He says that where the suture is not used the patients get well quicker and do better. This also I have observed. Yet, in the words of Czerny, so long as it is uncertain whether it is the treatment of the sac or of the ring and canal that is important, it is better to use both procedures. Hence most surgeons, since 1881, when Czerny, through his assistant Braun,[2] gave his second series of cases to the world, have, after removing the sac in an inguinal hernia, sewn the ring, and to some extent the canal also, snugly up to the cord in the male, and to the round ligament in the female; but when a femoral hernia has been encountered, generally speaking, only the sac has been removed and no attempt made to close the opening, mainly on account of the supposed danger of implicating the femoral vein. MacEwen, however, has given, in his remarkable cases, 9 instances of femoral hernia where not only was the wrinkled sac used as above described, but also in 8 cases the falciform process was sutured to Gimbernat's ligament, with eight permanent cures.

It is admitted, I may state, that aside from the question of closing the femoral ring, a cure is more apt to occur in this variety of hernia than in an inguinal one.

[1] W. MacEwen: On the Radical Cure of Oblique Inguinal Hernia by an Internal Abdominal Peritoneal Pad, etc., Annals of Surgery, August, 1886.

[1] Also, Israelsohn, Anderan, Leisrink, and Reverdin advise its not being done.
[2] Berlin. klin. Wochenschr., No. 4, 1881.

To close the canal, if such exists, or the space between the overlying rings, from one to four sutures in inguinal hernias have been employed, and of either carbolized silk, silver wire, or catgut. The majority of operators now use heavy catgut, either chromicized, as lasting longer, or the ordinary aseptic gut. Banks prefers heavy wire knotted, not twisted. I have resorted to both silk and wire, and have found persistent fistulas left from their use, and can show here several silk strands which had been discharged after being retained over eight months, and one which eventuated in a fecal fistula, which, however, soon closed after the casting off of the suture. Wire has played in my hands the same trick. One of Andaregg's objections to the wire sutures is rather fanciful. It is that they cause gaps by splitting the fascia through which they are passed, and also render the ring opening jagged by their cutting out, as, according to him, they all do.

Like others I have felt for some time that the mere suture of the external ring was unscientific as well as unsatisfactory, yet I had not the courage of Riesel, who, in 1877, boldly advocated the splitting of the inguinal canal its whole length, and after taking out a portion of it, to suture it from the internal ring downward, and gave subsequently 12 cases thus operated on, with only 1 relapse.

The first case of hernia I attempted to operate on was on the person of a patient in Bellevue Hospital in 1882, and in this, through a faulty idea of Czerny's procedure, I was led to do the imperfect operation of only tying off a part of the sac, and closing the ring by sutures. Descent of the hernia took place through the narrowed ring, and strangulation occurred, which, under the dressings, was mistaken for peritonitis, and was not recognized till too late. This led me to hesitate to use the ring suture in two subsequent cases, which, however, did well (Case I. is one of them). After that I employed it in nearly every case of inguinal hernia, going as far up as I could for the top suture, and putting in two or three sutures in each case, and inserting a drainage-tube between the last suture and the spermatic cord and within the canal. Sometimes a suture of fine catgut held the distal end of the tube in position. This was done to avoid, if possible, the suppuration which the frequent tearing up of the connective layers external to the sac often produced, and which has become limited in its occurrence, since the sac has been reached and enucleated, as already described. In watching, however, with interest and some anxiety, those cases where the suppuration seemed to be deep in the canal, and about the subperitoneal region of the internal ring, it was found that the cicatricial hardening thus resulting was of benefit in offering an additional barrier to the recurrence of the protrusion. Hence, early in 1885, I purposely changed my method of operating so as to leave the wound entirely open over the external ring, and to stuff it with iodoform gauze, and only to close it at the lower angle by one or two sutures. In this way, by the firm cicatrix thus produced, I have added, I fully believe, another barrier to the return of the rupture, and the recent publication, by Nussbaum,[1] of the suggestion to bring about repair by granulation over the ring by the application of the actual cautery, confirms me in its value.

With the exception of Riesel's plan, MacEwen's mode of closing the enlarged canal seems to me the best, and in the case of his plan of operation it has been easily accomplished. Not only are the sutures applied higher up the canal than usual, but in such a way as to drag the inner edge of the conjoined tendon under the outer pillar of the ring of Poupart's ligament, and so interpose a valvular obstacle to the recurrence of the hernia. A glance at Fig. 5 will show how this is done. After the sac has been returned to the abdomen and secured to the abdominal surface of the internal ring, the finger is passed into the canal to make out the inner and lower borders of the internal ring, and feel the pulsation of the epigastric artery, so as to avoid puncturing it. A threaded hernia-needle, Fig. 6, or a stout, curved Hagadorn needle in its proper holder, is then introduced, and, guided by the index-finger, is made to penetrate the conjoined tendon high up toward the internal ring, in

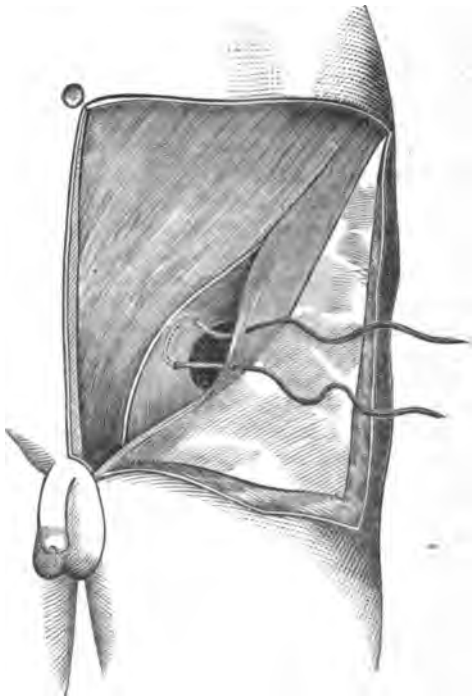

FIG. 5.—Schematic Closure of Inguinal Canal. (MacEwen).

two places about three-fourths of an inch apart, in such a way that the loop is on the under surface of the tendon and the free ends are on the upper side. These free ends are carried across the ring and canal (as one end is now without a needle, it should now be attached to one) and introduced from within outward, the lower one through Poupart's ligament, and the aponeurotic structures of the transversalis, internal and external oblique muscles, and the upper one through the transversalis internal and external oblique muscles, at points corresponding in height with the threads in the conjoint tendon. The suture is completed by drawing the free ends and tightly tying them together with a double reef-knot. In adults it is well to repeat the suture lower down the canal, and the pillars of the external ring are likewise brought together. Care is to be taken that the spermatic cord be left freely movable. MacEwen, from whom the above description is mainly taken, advises not tying the sutures until after all have been applied and tested. He further directs a drainage-tube to be inserted and the wound closed. I have, as before stated, preferred to leave the part of the wound over the ring open. Antiseptic dressings of iodoform dusted on sublimated peat-bags or gauze dressing are carefully secured by bandages, and kept on without change, if the case progresses favorably, for ten to fifteen days, or until stained. After healing has been accomplished the patients are allowed to get out of

FIG. 6. — MacEwen's Hernia Needles.

[1] Nussbaum: Ein neuer Versuch. zur Radikaloperation der Unterleibsbrüche, Centralblatt f. Chirurg., No. 24, 1886.

bed, this is usually done in about four to six weeks. They are advised to wear a compress, best made of superimposed layers of sticking-plaster and bandage, and later on a light, flat, broad truss. Heavy work should not be undertaken until past the third month. Concerning the subsequent use of a truss Andaregg directs that none should be worn unless the relapse actually occurs, as it not only causes stretching of the peritoneum and absorption of newly organized tissues, but also advises free muscular movements, particularly those affecting the abdominal muscles, that thereby the orifices and canal could be strengthened. I much prefer the safety of a *flat*, and therefore innocuous truss, and advise my patients to wear such from three to six months; undue pressure must be avoided.

It will be noticed by those who have followed me thus far that the important point as to the risk of this operation has not yet been more than touched upon, and, after all, the question hinges upon this point, for if any considerable danger exists in an operation which can be promised as curative in but a comparatively small proportion of cases, it should not be often resorted to in the treatment of an affection which is in itself not directly hazardous. Looking at the grand total of the cases collected by Andaregg, which include those of Ségond and Leisrink, there were 273 cases of free or non-strangulated hernias, with 12 deaths, 4 of which were from preventable hemorrhage, 8 from septic complications. Joining to these the statistics of others we have the following summary:

Andaregg, 273 cases of radical operation of free or non-strangulated hernia, 12 deaths (4 from hemorrhage) or 4.39 per cent.; Abbe,[1] 16 cases, 2 deaths (1 from hemorrhage); Banks, 36 cases, 1 death; Weir, 17 cases, 1 death; MacEwen, 33 cases, no death; total, 379 cases, with 16 deaths, or 4.22 per cent.

From these can justly be taken those dying from hemorrhage, since increased experience has taught how this is to be avoided, when the mortality will be seen to reach only to 2.90 per cent. Of the 36 femoral hernias operated on there were no deaths.

This is sufficiently low for surgeons to be warranted in carrying on the operation, which, as is seen by MacEwen's statistics and plan, is becoming more simple and less dangerous, and, in fact, when performed in healthy individuals, as is shown by analysis of Andaregg's cases, it is found that of 125 cases operated on between the ages of eleven to forty, only 2 died—1.6 per cent.—the mortality under and over that limit being 8.3 and 8.1 per cent. respectively. The size of the hernia, as his collection also shows, as well as the age of the patient, influences the mortality to a decided degree.

In concluding, the considerations expressed at length in the foregoing pages lead me to the following recapitulation:

1. That small reducible and easily controlled inguinal hernias can with safety be treated with Heaton's injection, and with a reasonable prospect of success—thirty per cent. of recoveries.

2. That in similar hernias in children, in which the use of a truss has failed, Heaton's injection is to be recommended as a particularly successful procedure.

3. That in unmanageable, painful, or irreducible hernias, demanding surgical interference, and sometimes those in which Heaton has failed, the radical operation should be resorted to, with the sac tucked up or tied off, as the surgeon may determine, but with a high and complete suturing of the canal.

4. That where omentum is found in a hernia it should be securely tied and resected.

5. That the wound in the region of the external ring should be healed by granulation to afford a cicatricial barrier, as an additional factor in the cure.

[1] Dr. Abbe has informed me that his cases up to January 31, 1887, amount to 36 inguinal, 10 femoral, and 4 umbilical, with 3 deaths—1 from hemorrhage, 1 from intestinal band strangulation, and 1 from sepsis, from a simultaneous varicose vein operation. His last 40 cases have been without a single fatal result—9 were done according to MacEwen's method.

ON THE ADAPTATION OF CORNING'S METHOD OF PRODUCING LOCAL ANÆSTHESIA BY COCAINE TO OPERATIONS ON THE EYELIDS.

By DAVID WEBSTER, M.D.,

NEW YORK.

SINCE Koller's publication of his discovery of the anæsthetic properties of cocaine when applied to mucous membranes, I have rarely given ether, in cases of adults, for the performance of any operation upon the eyeball or upon the tissues reached through the conjunctiva, except in cases of enucleation. I have constantly used cocaine in my cataract extractions, keratonyxes, iridectomies, paracenteses, in tenotomies of the interni and of the externi, in advancements of these muscles, in the removal of pterygia, and of tumors of the cornea and of the conjunctiva, in the excision of chalazia, and in the various operations upon the tear-passages, and in the removal of foreign bodies from the eye. In all these operations the anæsthetic effect of the cocaine has been most satisfactory. On several occasions I have performed operations involving the skin of the eyelids after having injected a solution of cocaine, hypodermatically, into the parts to be operated upon. The results were unsatisfactory. There was always not only so much swelling of the subcutaneous tissues, produced by the necessary traumatism and by the presence of the fluid, as to embarrass the steps of a delicate operation, but in every case the patient seemed to suffer nearly as much pain as though the operation had been done without an anæsthetic. I therefore reluctantly abandoned the use of cocaine in this way, and returned to the use of ether for my lid operations. It seemed to me highly improbable, not to say impossible, that any painless process would ever be discovered by which the skin and its underlying tissues could be anæsthetized, without swelling and with uniformity, over any desired area. Great was my surprise, then, as well as my delight, when my friend, Dr. Corning, demonstrated to me, upon my own person, that he had solved the problem. Several days later the doctor published an account of his method in the *New York Medical Journal* (vol. xliv., No. 19). I have no doubt that many of you have read the paper referred to. You will recollect that he found three things necessary to produce the desired effect.

1. An instrument for making multiple punctures of the skin, the use of which is painless and bloodless;

2. A galvanic battery; and

3. A solution of cocaine.

The portion of skin which it is desired to anæsthetize is first punctured by the use of the instrument, which makes many punctures at once, about a millimetre apart, the only sensation felt being that of a slight blow or concussion. A sponge saturated with a solution of cocaine, four per cent. if you like, and attached to the positive pole of a galvanic battery, is then placed in contact with the punctured skin, while the negative pole is brought in contact with some other portion of the patient's body, and five or six cells of the battery are turned on. After the application has been kept up five or six minutes the skin is found to be completely and uniformly anæsthetized. The anæsthesia may be carried to any depth, down to the bone if necessary, by removing the sponge and driving the needles in deeper, and then reapplying it for a time. Of course, it only remained for me to adapt this method to operations upon the eyelids, and to accomplish this the only thing that was necessary was to have a more delicate puncturing instrument made. At my request, and according to my instructions, Messrs. John Reynders & Co., of New York, made such an instrument, which I have already used in several cases with entire satisfaction. I shall report these cases further on.

The multiple-puncturer which I had constructed, and of which a wood-cut is here inserted, is of about the size of a hypodermic syringe. It consists of one hundred and fifty needles, which may be made to project from

a hollow cylinder to any desired length by means of a regulator, and a spiral spring within the cylinder, controlled by the handle.

Before using the instrument upon the eyelids, the conjunctiva should first be anæsthetized by dropping in a solution of cocaine in the usual way. The lid should then be raised a little from the eyeball by means of the little

finger, or a hard rubber spatula, so as to prevent any concussion of the globe. In puncturing the skin at the outer canthus, preparatory to the operations of canthotomy, cantholysis, and canthoplasty, I have found that I could best protect the eyeball from concussion by inserting the end of my little finger beneath the junction of the lids at the canthus and making gentle pressure so as to lift the parts slightly from the eyeball. A hard rubber spatula could easily be made suitable for this purpose. On using the instrument the needles should be drawn up out of sight into the cylinder by means of the handle (*c*), the end of the cylinder placed in contact with the skin, and then the handle let go. The bunch of needles strikes the skin with a slight thud and without any sensation of pricking or pain. The whole surface to be involved in the operation should be thus pricked over, and then a solution of cocaine (I have always used a four per cent. solution) should be driven through the punctures by galvanism as above described.

My first experience with the use of this method, other than that upon my own arm, was in the removal of a small tumor situated at the juncture of the lower lid with the cheek immediately below the outer canthus, on December 30, 1886. The patient was a gentleman, twenty-four years of age, and a journalist by occupation. He said the tumor began by a small "cake of flesh" which he picked off with his finger-nails about March 1, 1886. This re-formed and was picked off about five times before June 1st. Since that time he had let it alone, and it had continued to increase in size, rather slowly at first, within the last few weeks more rapidly. When he came to me it seemed about the size of a large pea. Its surface was smooth, unlike that of a wart, and I suspected that I had to deal with an incipient epithelioma. With Dr. Corning's assistance the parts about the growth were anæsthetized by his method, and the growth was removed and the wound closed by a suture without any manifestation of pain on the part of the patient, who also stated positively that although he felt every step of the operation it gave him absolutely no pain. As I did not intend to cut the growth I did not puncture it, but punctured all around its base where the incisions were to be made. The patient returned on the second day after and had the stitch removed. There was primary adhesion and only a slight linear scar.

The growth was examined by Dr. Ira Van Giesen, pathologist to the Manhattan Eye and Ear Hospital, who, on December 30th, reported as follows: "The tumor is ellipsoidal in shape, long axis 1 ctm., the other two axes 4 and 6 mm. It is invested by normal integument. Beneath this integument the tumor consists of large round-cells and large fusiform cells, with scanty basement substance and scantily supplied with blood-vessels. The anatomical diagnosis is, then, large round celled and large spindle-celled sarcoma."

My second operation with the use of this method of local anæsthesia was a cantholysis upon the left eye of a boy, aged sixteen. This youth had been the subject of granular lids and pannus since two years of age, and consequently was not well developed intellectually. He had been under constant treatment for his eye affection at the public institutions of New York nearly all his life. He came to the Manhattan Eye and Ear Hospital on January 5, 1887, when his vision was tested and found to be reduced to $\frac{1}{200}$ in the right eye, and $\frac{1}{100}$ in the left. After applying cocaine until pricking the skin with a pin did not hurt him, I made the usual cut at the outer canthus with scissors. He began to cry. I asked him what was the matter, and he said, "You are cutting my eye." I soon reassured him, however, and proceeded to finish the operation. There were no further manifestations of pain, and after the operation was over he admitted that it did not hurt him at all, but that he began to cry because he was frightened. When I performed the same operation upon his right eye, one week later, having used the cocaine in the same way, he gave no signs of pain from beginning to end. His vision and the condition of his eyes have improved very markedly since the operations, showing that the use of the anæsthetic in this manner has no injurious effect upon eyes with granular lids and pannus.

Of course, this method of producing local anæsthesia is not likely ever to come into general use in operations upon the eyelids of children or of timid adults. No matter how painless the process, and how thoroughly the parts are anæsthetized, such patients will always be frightened and rendered more or less uncontrollable by their consciousness of being cut, and by seeing the instruments as they are used about the eye. These objections will always hold good as regards all methods of local anæsthesia, and the class of patients referred to will, probably, always have to be put to sleep for the performance of surgical operations about the eye.

ACUTE EPIPHYSITIS OF THE HIP.[1]

By V. P. GIBNEY, M.D.,

NEW YORK.

On February 12, 1885, while attending some cases at the Nursery and Child's Hospital, Dr. Hance, the House Physician, asked me to see a well-nourished, bright little girl who was running about the ward. The child presented a decided limp, which was due to shortening of the left lower limb. There was no evidence of pain or tenderness, and seemingly there was no stiffness.

The history was given me at the time, and since communicated in writing, by Dr. Hance, to whom I am indebted for the specimen, that the child was born now four years and three months ago, and was a strong, healthy baby. When six or eight months of age—dates not recorded—she suffered from a large acute abscess of the hip, which opened and discharged for a number of months. There was no history of any traumatism. The sinus closed spontaneously, and the little patient was walking about by the aid of a chair when she was two and a half years of age.

My examination, two years ago, shows that the child walked with the left foot everted over nearly a quadrant, the limb being well rotated outward, and that the limp was quite marked. There was three-quarters of an inch shortening, but this amount was easily overcome by traction. On the anterior surface of the thigh, upper third, was a cicatrix about half an inch in length and seemingly of long standing. The trochanter major was at least three-quarters of an inch above Nelaton's line. Flexion was made easily, and without any resistance, to an acute angle—the full extent that sound limb showed. Extension was equally easy, but abduction was limited to one-half the normal arc. The head of the bone could not be recognized by palpation. Grating and crepitation in the joint were very marked. There was no atrophy, and there were no acute symptoms.

For the past eighteen months she has been in a most miserable condition, suffering from repeated attacks of inflammatory diarrhœa. During the last summer she had true lienteric diarrhœa. Early in January of present year she developed tubercular meningitis, from which she died.

[1] Read before the Section in Surgery, New York Academy of Medicine, February 15, 1887.

The autopsy confirmed the diagnosis. A few scattered tubercles were found in each lung.

The specimen, when sent to me, consisted of the upper fourth of the femur and a portion of the pelvis, which was supposed to include the acetabulum. The section, however, seems to have mutilated the capsular ligament, and I am unable to learn just how much of the capsule was destroyed by the morbid process. The unnatural mobility was well demonstrated, however, and the upper end of the femur slipped up and down over a very irregular cartilaginous surface. The upper rim of the acetabulum seems to have been destroyed, or, at all events, worn down into an irregular ridge. There was a very poor substitute for a cavity.

On removing what remained of the capsular ligament, adhesive bands were found passing irregularly from the two cartilaginous surfaces, showing the remnant of a very active arthritis. On vertical section of the femur there was found no vestige of an epiphysis, and the upper extremity of the diaphysis was covered by an irregular cartilaginous layer, probably the epiphyseal-cartilage disk. The diaphysis showed no signs of recent or old inflammation; and Dr. Thatcher, Pathologist to the Laboratory of the Polyclinic, pronounced the bone, to every appearance, normal. The medullary coats seemed also normal.

The specimen was not examined microscopically, because it was thought that nothing would be discovered that was not recognized by the naked eye, especially as so long a time had elapsed between the original inflammation and the death of the patient. I have seen, within the past ten years, a number of cases giving the clinical history presented by this case, but I have not had an opportunity of securing post-mortem appearances, except in a case presented by Dr. Jackson.

Following some European observers, I have been in the habit of designating such cases acute epiphysis. By reference to a paper "On the Acute Arthritis of Infants," published by Mr. Thomas Smith, in the "St. Bartholomew Hospital Reports" for 1874, I find ten cases in which the hip was the joint affected.

All were in children under one year of age, and in seven autopsies the bone-lesions described were: "Ragged hole opposite digital fossa in great trochanter, leading to subarticular abscess," in Case III. of series; "rim of acetabulum destroyed, . . . head and neck of femur gone," in No. IV.; "head gone, . . . cartilage of acetabulum here and there destroyed," in No. V.; no section made in No. VI.; "one-half of head of femur destroyed and free surface spotted over with punctiform ulcerations, one of which led to an abscess in cancellous portion of bone, acetabulum shallow and widened, sharp edge absorbed," in No. VIII.; "head and upper part of neck gone, diaphysis eroded," in No. IX.

Mr. Smith remarks that the "existence of subarticular abscess was first discovered by accident in making a section of the bone. I cannot doubt that in times gone by, when I was unaware of this peculiar pathological condition, I overlooked many instances of subarticular abscess from neglecting to make sections of the bone in cases of suppuration within the joint-cavities."

Mr. Macnamara in his former edition employed the terms acute epiphysitis, but in the last edition—1887—of his work on "Diseases of Bones and Joints" substitutes the terms "acute osteitis of infants."

Before the epiphyseal cartilage in infant life has formed, the centre of ossification for the epiphysis is within the synovial membrane, and hence inflammation beginning here rapidly invades the joint.

SULPHUR IN CHLOROSIS.—Dr. Paul Strübing and Dr. Hugo Schulz, of Greifswald, state that in a certain class of cases of chlorosis, in which iron and arsenic fail, the continuous use of sulphur is efficacious. In those cases, however, in which there is a catarrhal condition of the digestive tract it should not be used.

THE EMPLOYMENT OF MERCURY IN PARASITIC CONTAGIOUS DISEASES, MORE ESPECIALLY THE USE OF THE BICHLORIDE IN THE TREATMENT OF DIPHTHERIA.

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THE following paper has been drawn up with the view of eliciting the opinions of other physicians, and is therefore not at all exhaustive of the subject.

Long before the profession had the slightest suspicion of the important part played by microbes in the production or aggravation of disease, mercury, in some form or other, had been employed, and found to be a powerful rectifier of deranged action in the human organism, but more especially in those diseases that experience and modern scientific research have since shown to be infectious or contagious.

Need I refer to syphilis and to the various parasitic skin diseases that are effectively cured by preparations of mercury?

This is known and carried out in the practice of every intelligent physician. But there are some parasitic diseases so insidious and so rapid in their progress to a fatal issue, that it is absolutely necessary, in using this drug, to have recourse to the most potent chemical combinations of it.

It is now many years since the physicians in India, in their treatment of cholera, discovered that frequently repeated small doses of calomel gave better results than any other treatment that had previously been tried.

But as the profession in India are not encouraged (rather the reverse) to look upon this malady as a parasitical contagious disease, we cannot expect any further development of this treatment on these lines.

To show how prejudice influences our practice, I need only refer to the fact that not long ago, when Englishmen travelling on the continent of Europe fell ill with typhoid fever, English physicians were sent to prevent the continental doctors from giving calomel. I don't mention this as being myself an advocate for giving calomel in every case and in every stage of typhoid fever; but the fact that calomel has been used extensively as a remedy in this disease by the continental doctors is a proof that they, in their experience, considered that it had a beneficial effect, and I have little doubt that what alarmed the English physicians was the exaggerated reports they had heard as to the continental use, or abuse, of calomel in the treatment of typhoid.

If typhoid fever is a parasitical malady, then certainly it comes under the category in which mercury would be employed in the treatment, and if calomel has been proved to be effective on the continent of Europe, its benefit must have been derived from its parasiticide action, and to have that action it need not be given but in very small doses.

Sometimes a loaded tongue and a gorged portal system call for a large purgative dose of calomel, and mistakes may have been made in giving such doses during the later stage of the disease when the intestine was extensively and deeply ulcerated. But even this condition of the bowel does not contraindicate the intelligent administration of some preparation of mercury in parasiticidal doses.

The abuse, therefore, of a potent remedy should not prejudice us against its proper use.

At one time there was a hue and cry against the use of mercury in the treatment of syphilis, and the non-mercurial cure was upheld by distinguished physicians. The reason, however, why they took up this anti-mercurial position was simply from their inability to discern between the use and abuse of the drug, or because popular prejudice was too strong for them; so that even when

they did prescribe it, they had to give it a false appellation. I believe, however, that now very few regular practitioners pretend to cure the disease without the aid of mercury, and, no doubt, the drug is more judiciously administered than in former times, when it was not an unusual occurrence with a patient to lose his teeth and hair.

It was the careless, not to say reckless, use of this drug that brought it into disrepute.

In proposing any new line of treatment, even when suggested by modern scientific research, we have always custom and prejudice to contend against.

Some months ago I was called in consultation to see a diphtheritic case, but was told by the attending physician that I need not propose the bichloride of mercury treatment, because he was opposed to it. Fortunately there was no call for discussing the matter, as the patient had reached that stage of the disease when iron and strychnine are the indications (to the exclusion of any preparation of mercury whatever) in the treatment.

Since then I treated successfully a very severe case of diphtheria in a boy eight years of age. The bichloride of mercury was given in what may be called the parasitic stage of the disease, and this was followed up by a course of iron and strychnine.

His sister, seven years of age, who had been sent to stay with another family, was allowed to come back to her home either too soon, or the incubative stage of the disease had not yet passed. At any rate, she was seized with the malady, and the father, in his excitement and disappointment, called in a doctor who scraped and swabbed the throat three or four times a day, while sprays and gargles were also in constant use; but, *post hoc* or *propter hoc*, the child died after two days of this treatment. On the other hand, the boy recovered, although his convalescence was tedious.

The last case worthy of notice is the one that has induced me to write this article in order to bring into the foreground the bichloride of mercury treatment in parasitical diseases, such as diphtheria, seeing that some physicians are yet a little diffident in using such a powerful drug.

In the forenoon of October 3d I was called to see a child, four years of age, who, to all appearance, was suffering from an advanced stage of diphtheria. The child was prostrate, the glands of the neck very much swollen, and an ichorous discharge was running from nose and eyes, and the breathing was somewhat impeded. The history of the case was very simple. The child had been ill four days, and had been treated by an Arab doctor, who declared to the parents that there was no disease of the throat, and that the swollen glands in the neck had nothing to do with any throat affection.

In the early morning of October 3d, however, he told the parents that there was something wrong with the throat.

The parents had suspected this before, and were now dissatisfied with the medical attendant and dismissed him.

It was at this juncture that I was called in, and, after taking a general survey of the child, I attempted to have a look at the throat, but the patient struggled severely against my endeavors. At last I succeeded, and found a large piece of membrane hanging loose in the throat, which came away on the handle of the spoon, along with some bloody mucus. There could be no doubt now as to the nature of the malady. I then examined the urine by heat and acid, and found that it was about one-half albumen. The case looked far from encouraging; still I had seen cases equally as bad recover under the bichloride of mercury treatment.

Two teaspoonfuls of castor-oil were administered at once, and the following mixture was ordered:

℞. Hydrargyri bichloridi ..... gr. jss.
Glycerini ..... ℥ j.
Aquæ dest ..... ℥ iij.,

with the directions to give a teaspoonful (℥ j.) to the patient every half hour till six doses were taken, and then to give it every hour, night and day.

An iodoform ointment (1 in 10) was also ordered to be rubbed over the swollen glands every three hours, and crude carbolic oil to be used for disinfecting the whole house. The diet prescribed was beef-tea, and milk with lime-water.

In the afternoon some of the members of the family called at my house to tell me that they wished to have a consultation, and that they had asked Drs. X—— and Y—— (European physicians) to meet me at 6.30 P.M.

When I went at the hour appointed I found Dr. Y—— already there, but Dr. X—— had sent a message to say that he could not come till half an hour later. Dr. Y—— and I therefore decided to conduct the consultation without Dr. X——, as I had another engagement at seven o'clock. After I had given the history of the case and a statement of the treatment adopted, Dr. Y—— examined the child, who resented furiously his throat being looked at. The symptoms were pretty much the same as they were in the morning, and there was not the slightest doubt in Dr. Y——'s mind but that this was a case of well-marked diphtheria; but he opened his eyes with amazement at my treatment, which, no doubt, he thought was simply a quasi-legal way of poisoning the patient.

His proposition was to give the child chlorate of potass and to swab the throat frequently with an antiseptic solution of carbolic acid, at the risk of driving the child into convulsions and of wasting its strength in struggling against this method of procedure.

My experience in the treatment of this disease had extended over a good many more years than that of my consultant, and I had to tell him that I had employed his treatment, and a good many others besides, with most unsatisfactory results; that I had no specific to offer, but that from what experience I had had during the last three years with the bichloride of mercury treatment in parasitic diseases in general, and in diphtheria and cholera in particular, I was satisfied that I had in my hands not merely a powerful poison, but an excellent curative agent.

He would have none of it, however, and persisted in trudging leisurely along the old hackneyed road, whose ruts were deep from age, and that no one thought of filling up, as the railway now ran alongside of it.

Well, we had just to agree to differ, and my treatment was continued, with the whole responsibility on my shoulders, and under the weight of the protest of my consultant.

October 4th, forenoon: Patient had taken the medicine regularly as ordered.

In the act of swallowing it, however, a small quantity was lost by running out at the nose. This happened to have a good effect on the nose, which was covered with diphtheritic membrane, and on observing this I had the nose syringed out from time to time with the bichloride solution.

The patient was decidedly brighter, but the albumen had increased in the urine more rapidly than I had ever observed in other cases that were being treated in the same way.

Seeing that the general condition of the patient was improved, notwithstanding the increased quantity of albumen in the urine, I reasoned with myself in this way: The raw absorptive surface left by the detached membrane, while favoring the entry of the bacteria directly into the circulation, also favored the absorption of their most potent destroyer, the bichloride; and, probably, the augmentation of albumen in the urine, with amelioration of the general condition of the patient, was simply an indication of the death and expulsion of bacteria. Treatment continued every hour.

October 4th, afternoon, six o'clock: Patient apparently about the same as in the morning, only there was a decided diminution in size of the swollen glands of the

neck. The urine, however, was nearly solid with albumen.

Notwithstanding that, I ordered the medicine to be given only once in two hours. The patient had now taken a little over one grain and a half of the bichloride.

October 5th, morning: Patient brighter; had a better night; medicine taken regularly; neck much less swollen, but still being rubbed every three hours with the iodoform ointment. What struck me most was the remarkable diminution in the quantity of albumen in the urine. It was only about one-twentieth of the volume, and never again increased during the whole treatment of the malady. The process of swallowing was still very imperfect, so that part of the medicine and nourishment escape by the nose. The fever, that was never very high, is now abating.

October 5th, evening: General improvement going on. Medicine ordered to be given every three hours, and a teaspoonful of vinum ferri between times.

The patient had now consumed fully two grains of the bichloride. This treatment was continued till October 9th, with gradual improvement of all the symptoms.

On October 9th I suspended the use of both the bichloride and the vinum ferri, and gave Fellow's syrup instead—half a teaspoonful (3 ss.) every three hours.

On October 13th I left off attending the patient, giving instructions, however, to continue for some time with the Fellow's syrup. There was still a trace of albumen in the urine, and a little paralysis of the muscles of deglutition.

On October 17th the family physician, who had just returned from Europe, called to take me to see the child, as some new symptoms had developed. I found the child suffering from a little bronchial irritation, from having caught a cold. The urine was now perfectly free from albumen, and the only remains of the diphtheria was the slight paralysis of the throat that still continued. Fellow's solution was suspended for a day or two, while a stimulating expectorant was taken in its place.

On October 30th the child was brought to my surgery, comparatively well, but was ordered to continue his Fellow's syrup.

Remarks.—Mercury and its preparations are a parasiticide, and some of these preparations are more so than others.

The bichloride is, perhaps, the most potent, and is perfectly safe when intelligently used, and I should advise its being tried in all infectious or contagious diseases in preference to other preparations of mercury. Its well-known action in preserving the red globules of the blood intact is, no doubt, owing to its killing the bacteria that would otherwise cause their disintegration.

The biniodide is preferred by some physicians, and many who acknowledge the efficacy of other preparations of mercury still hesitate to employ the bichloride. As yet I have met with no untoward symptoms in using it; but should colic or irritation of the large bowel set in, then it ought to be suspended, at least for a time, and smaller doses given afterward.

In my last case of diphtheria, as recorded above, I am convinced that the natural detachment of the membrane favored the absorption of the drug, and thus also its curative action; and although I am averse to the forcible tearing away of the membrane, yet, without doubt, many bacteria are protected by it that we ought to endeavor to get at with as little annoyance to the patient as possible.

To effect this, it seems to me that the best method would be to employ some of the ingredients that are known to have a solvent effect upon the membrane, and these to be applied by means of spray, when the patient can neither gargle, nor drink, nor allow the throat to be touched.

We have all, no doubt, tried the effect of lime-water, as well as that of lactic acid, in this respect; but have we tried them with the addition of corrosive sublimate?

Of late "papayotin" has been in vogue in Germany as a remedy for diphtheria; but from the cases I have seen reported its action seems to me to be very decidedly solvent and nothing more. Still, that is a great matter when so many cases die of suffocation from the presence of the membrane.

Papayotin is prepared from the juice of the trunk and fruit of the South American melon-tree (*Carica papaya*).

It is innocuous when taken internally, but when injected into the blood it paralyzes the heart and nervous system.

It must not be used, therefore, without certain precautions. I should be very chary in applying it to a bleeding surface.

Its local application prevents the fibrinization of the serosity thrown out by the blood-vessels on any surface, whether on a mucous membrane or on an abraded skin, but the living, healthy mucous membrane is not affected by it.

Weak solutions of it have no solvent effect. About one to six is the average strength to be used, and may be applied to the part affected by converting it into spray by means of a brush, by gargling with it or by drinking it, and two or more of these methods may be combined if considered necessary or desirable, and persisted in every hour till the membrane is dissolved or obliterated, which will be the case, probably, after eight or even fewer applications.

In my opinion papayotin merely digests the membrane (just in the same way as the gastric juice digests the fibrinous material in our food), and may or may not have any parasiticidal action whatever. I have not the slightest doubt, however, that it forms an excellent adjuvant to the bichloride treatment of this formidable malady, that is still one of the *bêtes-noires* of the profession.

Syringing the nose with the antiseptic solution of the bichloride should not be neglected, as in this way the upper part of the pharynx comes under the direct influence of the remedy; while, if the false membrane has already been formed there, the papayotin may be applied to dissolve it away.

When the patient is not able to swallow, or refuses to take nourishment, and is very prostrate, I give enemas every four hours, consisting of about four ounces of strong beef-tea, with twenty drops of brandy. When milk can be taken, I prefer it to all other kinds of nourishment, and I generally add to it about one-third aqua calcis.

The following are the usual precautions I adopt in all diphtheritic cases:

First. Isolation of those who are not required to attend upon the patient.

Second. Thorough and constant disinfection of the whole house, but sick chamber and water-closets in particular.

For this purpose I use towels saturated with crude carbolic oil, and hang upon towel-racks or on any other suitable thing.

Third. Attendants are made to gargle their throats now and again with some disinfectant, or even with salt water.

Fourth. Chamber utensils are also disinfected.

I have also thought (although I have not as yet carried it into practice) that it would be a good precautionary measure to put both attendants and those who have been isolated on a mild bichloride régime as long as there was any danger of the appearance of the malady that might be still in its incubative stage.

I claim for the bichloride treatment this great advantage, that besides giving better results than other remedies the patient's strength is not wasted by those almost convulsive fits that are so frequently induced by the struggles of the patient to prevent the throat from being examined.

It is desirable that through the medium of your journal information should be given to the profession as to the experience of other medical men who may have already, or who will in the future, put this treatment still more extensively to the test.

CAIRO, November 10, 1886.

Clinical Department.

DIGITAL AMPUTATIONS UNDER COCAINE.

Dr. Nelson L. North, Jr., of Brooklyn, N. Y., writes that he has used cocaine in a number of cases of finger amputations necessitated by various injuries, chiefly those caused by stamping-machines and circular saws. The operations varied in extent from the amputation of a part of the last phalanx to that of the greater part of an entire finger or thumb. The wound is first thoroughly saturated with a four per cent. solution of the hydrochlorate of cocaine before any examination is made, and then, after waiting a few minutes for absorption to take place, one can examine and probe the wound with entire satisfaction, as the patient makes no resistance, because he suffers no pain. Let us now proceed to cut our flaps, following each considerable incision with a few drops of the cocaine solution, and using it also occasionally to wet the entire denuded part, and apply ligatures and saw or clip the bone as necessity may demand. The wound is now ready to be closed, and after thoroughly irrigating it with an antiseptic solution and providing for proper drainage, sutures are applied and the wound dressed in accordance with the principles of antiseptic surgery. The method is simply one of soaking the wound with the cocaine solution. The cocaine is not injected, not that there is any objection to such a procedure, but simply because it is unnecessary, the anæsthesia being sufficient without the use of the hypodermatic needle. The question has been asked whether cocaine does not interfere with primary union. In the cases which have fallen under the observation of the writer, no bad effects resulted from this method, either on the constitution of the patient or the healing of the wound.

TREATMENT OF "LOCO" POISONING IN IDAHO TERRITORY.

Dr. T. E. Wilcox, U.S.A., of Washington, D. C., writes that the treatment employed by the cow-boys in Idaho for poisoning by the loco-weed consists in amputation of the tails of the animals affected. They claim that they seldom lose any stock when this treatment is instituted early enough. "The paralysis," the writer adds, "is probably due to congestion of the spinal cord; it affects the posterior members first. The pupils are contracted, as after the use of eserine. Oxytropis Lambertii, astragalus mollissimus, and possibly others of the leguminosæ, are charged with producing loco-poisoning. In Idaho the cow-boys call these plants 'larkspur,' although true larkspur is rarely found in their line of march and at that season of the year."

INSOLUBILITY OF CAPSULES IN AN INFLAMED STOMACH.

Dr. B. H. Boyd, of La Fayette, Ind., referring to a paragraph in a recent issue to the effect that gelatine capsules are not dissolved in a stomach which is inflamed and irritable, following excess in the use of spirits, reports his experience as follows: "August 10th, at 11 A.M., saw Mr. D——, aged twenty-seven, married, thin, pale, anæmic, tremulous, was an habitual drinker, and had been lately on a spree, but has taken no stimulants for three days. Says he had a chill yesterday afternoon, and a high fever during evening and night. Skin, moist and soft. Temperature, 100°; pulse, 80, but irregular and intermittent. Ordered bromide and acetate potass., to be used freely and continuously; a purgative, and quin. sul., grs. xx., to be given next morning in capsules. August 11th, 4 P.M.—temperature, 103°; pulse, 88; the purgative had acted, and the other medicines had been given as ordered. August 12th, 8 A.M.—temperature, 98°; pulse, 80, and irregular. Urine scanty, high-colored, and containing no albumen. Gave quin. sul., grs xxv., in capsules, and continued salts of potass. At 5 P.M. of the same day the temperature was 103°; pulse, 88. Quin. sul., 3 ss., to be given next morning early. August 13th—remission as before. Repeated quinine capsules. Fever returned in the evening as usual. Quinine capsules ordered to be given again on the morning of the 14th. August 14th, 4 P.M.—temperature, 103.5°; pulse, 86. On examining the stools I found two capsules undissolved, with contents intact. I then ordered quin. sul., 3 ss., *in powders*, to be given next morning in water. I saw patient at 4 P.M. of same day, found the temperature 99°; pulse, 80, of normal volume, and regular. After this the temperature was never observed above 100°, and patient convalesced fairly, considering his broken-down condition.

"Patient used no alcoholic beverages nor medicines during these observations, and his diet consisted of milk, meat soups, eggs, oysters, and toast."

EARLY DENTITION.

Dr. F. B. Morrill, of North Berwick, Me., referring to a case reported recently by Dr. Winsor, relates the following: "I attended Mrs. H——, aged twenty-two, primipara, in confinement February 3, 1884, and delivered her of a female child after a natural labor. The mother was anæmic and asthenic, had had poor appetite through most of her gestation, her diet being made up largely of fruits and oatmeal, yeast-bread, and some beefsteak. She got up from her labor very well with the aid of tonic treatment. She had no milk, and I put the child on a prepared food. When the child was six weeks old, the father, who was employed as an operative in a woollen-mill, invited me in to see his baby's tooth. I with surprise accepted the invitation, and found the left central lower incisor through the gum, and in a week the right central lower incisor was through. The other teeth appeared at the usual time. On May 10, 1885, I again attended Mrs. H—— in confinement, delivering her of a male child weighing eleven pounds. The labor was a complicated one. The mother's condition was rather better during this gestation than in the previous one, but her diet was about the same. This baby's teeth are following the normal course."

Dr. A. Brothers, of this city, referring to the same subject, writes as follows: "My case was that of a child three weeks old with a hare-lip, in which the intermaxillary bone protruded. I operated for the deformity, notched with bone-forceps the misplaced bone, and forced it back to its proper place. Five weeks later, therefore at the age of eight weeks, an incisor tooth had cut its way through the portion of bone referred to. The cause for this seemed to me to be the increased activity which was set up by the operation."

CAN DIPHTHERIA BE COMMUNICATED BY TOOTH-FORCEPS?

Dr. J. W. Collins, of Toronto, Ont., writes: "During the month of January, 1887, there appeared in Toronto a man calling himself the 'king of dentists.' He held free clinics for the extraction of teeth every evening for one week. At these 'extracting bees' he would call upon all who had aching or decayed teeth to come forward and receive gratis the benefit of his wonderful skill, and, it is needless to add, he had plenty of work. During the latter part of the week I saw seven cases of diphtheria, all developed within two days. In each case one or more teeth had been extracted by this itinerant dentist. No other cases of the disease had been known in the community, either in my practice or in that of any of my professional brethren. Is it probable that the disease was communicated by the instruments?"

Progress of Medical Science.

THE PROPAGATION OF CARDIAC MURMURS TO THE EPIGASTRIC AREA.—In 1881 Professor Federici showed with what ease and how definitely the area of the stomach could be mapped out by ascertaining by means of auscultation with the stethoscope the extent to which the sounds of the heart are audible in the epigastrium. Over the stomach both sounds can be clearly heard; over the colon, only the second. By percussion it is frequently difficult to distinguish a stomach note from one given by a distended colon. The propagation of the cardiac sounds gives a ready and reliable means of differentiation. Auscultation of the epigastrium may also be used as a means of separating cardiac murmurs. It is sometimes not easy to distinguish between an aortic-diastolic murmur propagated to the apex and a post-diastolic or a pre-systolic murmur, both of which latter are produced at the mitral orifice. It is found, however, that murmurs produced at the aortic orifice are not propagated to the stomach area, whereas mitral murmurs are clearly audible over the stomach. Vanni has recently (*Lo Sperimentale*) confirmed these statements by clinical observations and post-mortem investigations.

PRIMARY CANCER OF BRONCHIAL GLANDS AND LUNG.—At a recent meeting of the Academy of Medicine in Ireland (*The Dublin Journal of Medical Science*, November, 1886) Dr. M. A. Boyd read a paper on intra-thoracic cancer, which he described as being met with in two situations—the bronchial glands and anterior mediastinum. The former variety, when it involved the lung, was frequently in its advanced stages mistaken for phthisis, the latter for aneurism. He read the histories of three cases which came under his observation last year in the Mater Misericordiæ Hospital, with the post-mortem examinations made in each case. He regarded the symptoms described in standard works as indicating cancer—such as fixed pain in the chest, red-currant jelly expectoration, and enlargement of cervical glands—as unreliable, these symptoms not being present in a fourth of the recorded cases. He considered constant blood-spitting, with congestion of the larynx, and aphonia, with or without paralysis of vocal cords, and urgent dyspnœa, as more reliable signs; and as indicating the situation of the growth in the bronchial glands, with pressure on the bronchial veins and tubes. He considered the primary form of the disease as much more frequent in these situations than secondary formations when the disease began elsewhere. His general conclusions with regard to the disease were, that it occurred most frequently in hard drinkers; that pain was not a frequent symptom until pressure on the nerves in the thorax took place; that constant blood-spitting with symptoms of pressure on the bronchial tubes and obstruction in the œsophagus indicated malignant disease involving the bronchial glands; that, like malignant disease of the abdomen with effusion of blood-stained serum into the peritoneal cavity, malignant disease of the thorax was frequently accompanied by pleural effusion containing blood; that the disease sooner or later invaded the pericardium and compressed the superior vena cava, causing swelling of the face and upper extremity, and occasionally caused pressure on the recurrent laryngeal nerve, with paralysis of one or other vocal cord; that retro-sternal dulness, with displacement of the heart, and pressure on the vena cava, accompanied by paralysis of one or other vocal cord (aneurism being excluded) were absolutely diagnostic of mediastinal malignant disease; that malignant disease of the bronchial glands in its latter stages (when the patients most frequently sought advice), accompanied by muco-purulent expectoration mixed with blood, wasting, and night-sweats, resembled phthisis so closely that autopsies were not made, and the frequency of the disease in consequence was lost sight of. The disease in his experience was fatal in from two months to eight—his three cases having died about six months after the disease first showed itself.

THE EFFICACY OF BASHAM'S MIXTURE IN CHRONIC DIFFUSE NEPHRITIS.—Dr. A. L. Gihon reports (*The Chicago Medical Journal and Examiner*, January, 1887) a case of Bright's disease in which the albuminuria completely disappeared under the use of the mistura ferri et ammonii acetatis (U. S. Ph.). The patient was a naval officer, who developed nephritis after exposure to malarial influences during a long cruise on the China station. At the Naval Hospital, New York, where he was first received on reaching the United States, his urine was noted as "smoky, variable in quantity, containing from one-sixth to one-twelfth of its volume of albumen, with granular and hyaline casts. There was general œdema, with consequent dyspnœa, spasmodic breathing, interference with heart's action, and pains in the extremities." He improved sufficiently to permit his transfer to Washington, at his own request, that he might be with his family, but the fatigue of travel proved more than he was able to undergo, and he arrived in a state of extreme prostration, his heart acting feebly and tumultuously—beating one hundred and forty to one hundred and sixty per minute—pulse scarcely discoverable at the wrist, temperature ninety-nine, features pinched, eyes pearly, skin dull yellow, surface cold, clammy sweat, tongue broad, moist, pale and cold to the touch, great præcordial distress, dyspnœa, excessive restlessness, moaning, hiccough, distention over lower pleuræ, tumid abdomen, almost complete suppression of urine, and incessant violent retching and vomiting. He was put into a hot bath, dry cups applied over the loins, and the abdomen enveloped in hot turpentine stupes. Later the mistura ferri et ammonii acetatis, the use of which had been commenced at the Naval Hospital at New York, was administered in small doses alternately with boiled milk and lime-water, and repeated as often as it was vomited. This treatment, catharsis being at the same time established, was persisted in with such modifications as circumstances required. The irritability of the stomach gradually abated on the restoration of the secretion of urine. The Basham's mixture was continued in larger doses at longer intervals, and the symptoms continued to abate in severity. After a few months his urine was found to have a specific gravity of 1022, was slightly acid, and averaged daily thirty-four ounces; no casts and not the slightest trace of albumen were discoverable. Improvement became rapid. His flesh became firmer and of rosier color, all puffiness disappeared from the face, and all swelling from the lower extremities. Some abdominal distention remained. Of course the diffuse nephritis was not cured, but all untoward symptoms subsided for many months.

PARALYSIS CONSEQUENT ON PAROTITIS.—Dr. Joffray has described a form of paralysis resulting from parotitis. It affected all four limbs, beginning, apparently, in the lower, and extending to the upper; the latter, however, being less markedly disturbed than the former. The paralysis was preceded by pains of a lancinating and constricting character, and became manifest about twenty-one days after the onset of the causal disease. It was associated with abolition of the reflexes—knee and plantar. The muscles failed to respond to faradic or galvanic excitation. This was the case not only with the muscles completely beyond volitional control, but also with those still capable of being influenced to some extent by the will of the patient. The sensibility of the muscles was increased, any slight pressure on them causing pain, while the sensibility of the skin itself seemed impaired. The special senses were intact. There was slight albuminuria, but no other disorder of the urinary function. Cure was effected, in the case of a child aged four and one-half years, in the course of four months, by the administration of iodide of potassium.—*Progrès Médical.*

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GEORGE F. SHRADY, A.M., M.D., EDITOR.

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SIMPLE CONSTIPATION AND ITS SUCCESSFUL MANAGEMENT.

AMONG the morbid states of the system for which suffering humanity seeks relief, often with but oftener without medical advice, none is probably of more frequent occurrence than constipation. From time immemorial to the present day countless expedients, including the use of innumerable drugs, have been resorted to in the endeavor to spur to renewed activity the flagging function of defecation. Sir Andrew Clarke has recently published some suggestive remarks concerning this subject, which, though not very original, nevertheless carry with them the weight of large experience and eminent practicality.

Sir Andrew inveighs particularly against the ignorant and unskilful domestic management of constipation, with its many untoward consequences, some of which may indeed become quite serious. He might with equal propriety have denounced the unskilful, because routine, practice of dealing with this disorder still practised by many medical men. The real mischief often begins by the self-conscious patient seeing imaginary evils impending from the accidental failure of his bowels to act on some occasion when he has decided that they ought to have done so. The *maladie imaginaire* forthwith concludes that the only way to relieve his "attack of constipation ' is to take "a dose." And, he argues, the stronger the dose, the more effectual the cure. The medicine having operated, the bowels are probably found more inactive than before, which leads to renewed "doses." Soon the bowels fail to respond to natural stimuli, and periodical discharges are excited only by repeated doses of stronger and stronger aperients. In the words of Sir Andrew, "With few exceptions, no person has passed through this experience and fallen under the tyranny of aperients without finding his life invaded by a pack of petty nuisances which lower his health, vex his temper, and cripple his work."

Now, it is quite true that "for the most part all these troublesome consequences of constipation may be avoided by attending to the conditions of healthy defecation." Chief among these conditions are a sufficient quantity of digestible food—including plenty of liquid—the presence of enough refuse matters in the colon, a decent regard to nature's promptings, regular solicitation once every twenty-four hours, the co-operation of the will, and contentment with a moderate evacuation. Of course, this simple and natural regimen presupposes a healthy nervo-muscular apparatus, without which the function in question cannot be properly performed. Sir Andrew briefly discusses each of the above conditions; but they are so well known to the profession that it is unnecessary to dwell on any of them, except, perhaps, the last-named—*i.e.*, contentment with a moderate discharge. On that score there is probably more ignorance than on any other point connected with the subject. According to Clarke, "for a man of average weight, consuming an average amount of food, the average amount of fæces ready for discharge in twenty-four hours is about five ounces. This should be formed, sufficiently aërated to float, and coherent." There is not the slightest doubt that "many people expect to have a much more abundant discharge, and are dissatisfied or anxious if they do not get it." Such persons commonly resort to aperients in order to obtain "relief" from their imaginary constipation, and thus invite the very condition from which they are making misguided efforts to escape.

To effect a cure in such cases it is necessary, first of all, to stop aperients, and then to renew obedience to physiological laws. Sir Andrew's instructions to this large class of patients are so simple, direct, and practical that we cannot do better than here transcribe them:

"1. On first waking in the morning, and also on going to bed at night, sip slowly from a quarter to half a pint of water, cold or hot. 2. On rising, take a cold or tepid sponge-bath, followed by a brisk general towelling. 3. Clothe warmly and loosely; see that there is no constriction about the waist. 4. Take three simple but liberal meals daily; and, if desired, and it do not disagree, take also a slice of bread-and-butter and a cup of tea in the afternoon. When tea is used it should not be hot or strong, or infused over five minutes. Avoid pickles, spices, curries, salted or otherwise preserved provisions, pies, pastry, cheese, jams, dried fruits, nuts, all coarse, hard, and indigestible foods taken with a view of moving the bowels, strong tea, and much hot liquid of any kind, with meals. 5. Walk at least half an hour twice daily. 6. Avoid sitting and working long in such a position as will compress or constrict the bowels. 7. Solicit the action of the bowels every day after breakfast, and be patient in soliciting. If you fail in procuring relief one day, wait until the following day, when you will renew the solicitation at the appointed time. And if you fail the second day, you may, continuing the daily solicitation, wait until the fourth day, when assistance should be taken. The simplest and best will be a small enema of equal parts of olive-oil and water. The action of this injection will be greatly helped by taking it with the hips raised, and by previously anointing the anus and the lower part of the rectum with vaseline or with oil. 8. If by the use of all these means you fail in establishing the habit of daily or of alternate daily action of the bowels, it may be necessary to take artificial help. And your object in doing this is not to produce a very copious dejection, or to provoke several smaller actions: your object is to coax or persuade the bowels to act after the manner of nature, by the production of a moderate more or less solid-formed discharge. Before having recourse to drugs, you may try, on waking in the morning, massage of the abdomen, practised from right to left along the course of the colon;

and you may take at the two greater meals of the day a dessert-spoonful or more of the best Lucca oil."

The author maintains that if this programme be faithfully adhered to, aperients will rarely be found necessary. Of course, Clarke admits that the use of drugs is not altogether avoidable. His own preference is for the compound aloin pill (aloin, gr. ½; ext. nucis vom., gr. ½; ferri sulph., gr. ½; myrrh and soap enough to make one pill), taken half an hour before the last meal of the day. We fully agree with Dr. Clarke in believing that "the particular agent employed for the relief of constipation is of much less importance than its mode of operation." Whatever the remedy, it should act after the manner of nature in securing a daily formed stool. If in place of yielding to the importunities of patients demanding new and stronger aperients physicians would always take the pains to insist upon some such plan as outlined above, we have no doubt that there would be less trouble for and from constipated persons.

QUACK MEDICAL ADVERTISEMENTS AND THE RELIGIOUS PRESS.

We have been very much edified by the article which, in response to one of our editorials on quack advertisements and the religious press, appeared in the columns of the *Christian Advocate* for February 24th. We heartily indorse the principles which govern the editor with reference to all advertisements. We accept as eminently proper the criticism which he makes on some of the advertisements that have appeared in The Medical Record. We also acknowledge the receipt of the suggestion that "it" (The Record) "could find a better field for its missionary labors by selecting some of those religious papers which admit the worst kind of quack remedies supported by ministerial certificates," etc. We do not, however, adopt the suggestion that we could find a better field. Why? Simply because the columns of the *Advocate* have been so nearly clean that it is worth a double effort to make them *entirely* so. Of course, the *Advocate* does not wish to avail itself of the argument that because other religious papers soil themselves altogether it may be excused for being a little bit impure. We are happy to say that we believe that the principles by which the *Advocate* is governed would not allow it to seek such a refuge, however much the editor's parting shot may have of that appearance.

But let us return to the principles which govern the editor with reference to advertisements.

The editor of the *Christian Advocate* "gives instructions to the superintendent of the advertising department; these instructions are: 1. Admit no advertisements which declare that the medicine advertised is an infallible cure. 2. Admit none that declare that they cure diseases."

This is an excellent instruction, and one which those religious newspapers that admit to their advertising columns "the worst kind of quack remedies supported by ministerial certificates" would do well to take cognizance of. Now with reference to the medicine in question. The criticism of the *Advocate* on the advertisement as it at this date stands in its columns is well deserved, and we hope that the superintendent of the advertising department will "require the advertisement to be trimmed down several times" more. "It does state," says the editor, "that in croup it gives almost instant relief." "Not a solitary direct statement of its *infallibility*, or even of its *curing* any disease, is found in the advertisement."

On this we have to offer the following: It does state that "it *never fails* to give almost instant relief." Never fails and infallibility are so nearly the same that we feel warranted in assuming that those who read advertisements because they are in search of remedies will be led to believe that this particular one *always* relieves and that *almost instantly*.

The whole secret of the success of quack advertisements lies in words which convey the idea of certainty—"best," "unsurpassed," "never fails," etc. We trust that the *Advocate* may see its way clear to still further apply the pruning-knife. We make the bold assertion that the remedy has not yet been discovered that "never fails to give almost instant relief in that frightful malady, croup." The proprietors of this remedy in giving such a statement to the public have taken a position never yet assumed successfully by any intelligent, educated physician, and, by so much at least, the *Advocate* should not aid in sustaining what may give rise to deception.

Besides, the editor of the *Advocate* would act very unwisely should he peril the life of one of his own children by assuming the responsibility of diagnosticating that "frightful malady," the croup. By the admission of notices of remedies for such diseases, for in this instance *relief* may be only the luring precursor of death, the newspaper or the journal becomes accessory indirectly to an extent that holds it and its editor *responsible*. This is no new view to the editor of the *Advocate*, and we have read with pleasure his trenchant words against what was no greater danger than that which we have thus endeavored to point out.

From this standpoint we should say that no newspaper or medical journal should permit in its columns advertisements containing such language as the following: "The best known remedy for either," speaking of cough or cold in persons having a tendency to consumption. This is too grave a responsibility for anyone to assume, either professional or non-professional. Why? Simply because medical science has demonstrated at the bedside that there is no *best* remedy yet known. And yet the *Advocate* advertises it as "the best known remedy for either."

In the first advertisement under consideration the advertiser says that *coughs* are "more speedily, surely, and thoroughly stopped" "than by any other medicine," and that it "is unsurpassed for the relief of coughs."

Certainly, it requires no play upon words to make it appear that for coughs "the best known remedy," and that which *stops* coughs "more speedily, surely, and thoroughly than any other medicine," and "is unsurpassed for the relief of coughs," can, by any possibility, be truthfully applied to two remedies. And still the *Advocate* advertises both proprietary medicines.

The *Advocate* is evidently under conviction, and we doubt not that it will draw the lines even closer than it has yet done. Would that the medical profession and the medical journals had as honest and powerful an ally

in every religious newspaper in the land as they have in the *Christian Advocate*, for then the nostrum-venders might be driven from this field.

The statement that "it is impossible for the medical profession to take care of all the sick in the country" will not bear the test of either argument or criticism for a moment. That "thousands of persons live so far from physicians that they need some remedies in the house," doubtless is true; but it by no means follows that they cannot be supplied by the physicians of the country with remedies equally efficacious and much more trustworthy than those which are heralded in the advertising columns of the religious and secular newspapers.

We hope that the *Christian Advocate* will aid us with its clarion voice in preaching against the debasing practice of inserting quack medical advertisements in the columns of the religious press. We will also do the best that we can to keep our own garden free from weeds.

A SURGEON REMOVED BECAUSE HE PERFORMED LAPAROTOMY TOO OFTEN.

At the annual meeting of the Governors of the Liverpool Hospital for Women, the case of Dr. Imlach was made the subject of lively discussion, he having been accused of too frequent indulgence in spaying, and of varying from the consultation custom of the hospital. The controversy seems to have been based mainly on personal grounds, there being great jealousy and antagonism among the staff. On the question of re-electing the staff arising first, Dr. Briggs, a new member, was elected unanimously; secondly, Dr. Burton, who had been on the staff since the formation of the hospital, and who was pointedly accused by Mr. S. B. Bacon of being "the originator" of the quarrels, was elected by thirteen votes to nine; thirdly, when the case of Dr. Imlach's re-election came up, it was negatived by seventeen to sixteen votes.

The whole affair quite exceeds, in scandalousness and publicity, anything that we have ever been able to produce in this modest new world of ours. We salute our mother country. In the matter of exhibiting dirty professional linen, she has now got far ahead. As for Dr. Imlach, he has evidently been doing oöphorectomy well, but not too wisely.

EPIDEMICS OF PNEUMONIA IN THE COUNTRY.

In certain rare cases pneumonia attacks a community with a suddenness and to an extent which constitutes a veritable epidemic. In the *British Medical Journal* of August 11, 1883, Dr. Bruce describes the appearance of such an epidemic at Dingwall, a locality in which the disease had never prevailed before, except to a small extent. From May to September Dr. Bruce treated twenty-three cases, and Dr. John Adam twenty-four cases. Many of the patients lived far apart, and there was no evidence of contagion or of some specially limited local cause. The disease seemed to prevail just as influenza sometimes does, attacking persons indifferently.

Dr. Mackenzie, of the Isle of Skye, records the appearance of an epidemic of influenza in that locality, followed by the development of pneumonia in many of the persons attacked.

Dr. R. J. Foulis reports a very typical epidemic of pneumonia occurring in the vicinity of Wylam-on-Tyne. In a population of about two thousand, there appeared within two months one hundred and fifteen cases of pneumonia. The disease followed a very severe storm; it ran the usual course of croupous pneumonia; it attacked young persons mostly, and these of all classes. In fine, it had the appearance of an acute infectious disease.

The epidemics of pneumonia above described occurred in somewhat thinly settled districts, and are unlike the occasional epidemics of this disease seen in overcrowded garrisons or in sewer-gas-poisoned houses.

Doubtless some of our readers can recall epidemics of true croupous pneumonia occurring in rural localities. Careful observations of such phenomena would be of decided interest.

News of the Week.

Excision of the Larynx.—We learn from the daily papers that a larynx has been removed *in toto* by a Philadelphia surgeon. The patient died. The same operation with the same result has recently been done in Baltimore and London.

Dr. Lewis Fisher, formerly of Morristown, N. J., and later of this city, died recently at Jacksonville, Fla., in the forty-eighth year of his age.

A Death from Chloroform occurred in the practice of Dr. William H. Pancoast recently. The anæsthesia was not completely accomplished before death occurred. The man had a fatty heart.

The Tennessee State Medical Society meets at Nashville on the second Tuesday in April. It promises to be a specially large and interesting meeting.

Bacteriology and its Clinical Therapeutics is the tittle of the general address which will be delivered by Professor Mariani Semmola before the Ninth International Medical Congress.

The Sixteenth Congress of German Surgeons meets at Berlin on April 13th, 14th, 15th, and 16th next. Professor Richard von Volkmann will preside. One of the subjects of discussion will be, "Occlusion of the Intestines, Peritonitis, and Intestinal Perforation, from an Operative Stand-point," to be opened by Dr. Madelung, of Rostock.

The Sixth German Congress for Internal Medicine will be held at Wiesbaden, April 13th to 16th, under the presidency of Professor Leyden. Among the subjects announced for discussion are, "The Therapy of Phthisis," "Cerebral Localization," "Pathology and Therapy of Whooping-cough," "Pernicious Anæmia," "Tabes Dorsalis," and "Experimental Epilepsy."

The Death of Professor Béclard occurred quite suddenly on February 9th, in the sixty-ninth year of his age. He was Professor of Physiology in the Faculty of Paris, and made many important contributions to that science. His treatise on "Physiology" has long been a standard one in France, but never got much popularity outside that country. Béclard was Dean of the Paris Faculty.

Despatches Announce that Professor Virchow has won his seat in the Reichstag at the last elections.

The Alumni Association of Long Island College Hospital held its seventeenth annual banquet on the 2d inst.

The New York Polyclinic.—The Faculty of the New York Polyclinic tendered a reception to its numerous friends in its building, No. 214 East Thirty-fourth Street, on Wednesday, March 2d. One of the features of the occasion was the celebration of the matriculation of its thousandth student. The different clinic rooms were duly inspected, and the sociabilities terminated with an elegant supper.

An Enterprising Female Charlatan.—The *Pacific Record* states that a female doctor in San Diego, Cal., started a cancer epidemic, and her rooms were filled with patients, from each of whom she extracted a cancer "without pain," and was rapidly getting rich, until someone discovered that the "cancers" were pig-kidneys. Many female doctors have ridden this hobby of curing cancers into a good practice, without one atom of knowledge. It is only necessary to employ two or three women to declare that *they* have been cured, and the thing is done.

Jews in the Paris Faculty of Medicine.—Professors Germain Sée, Charcot, Hayem, Marc Sée, and some other prominent members of the Paris Faculty of Medicine are of Jewish descent.

Considerable Excitement has been caused in medical circles at Boston over the fact alleged by the *Boston Medical and Surgical Journal* that the following message was left on the slate of a Boston physician:

οἱ ἀναγκαῖοι ἐμὲ χρήζουσιν δίκαδε ἰέναι.

Several translations of this sentence have been offered, the best one being sent up by a surgeon of this city. When the facts are all brought out, it will probably be shown that the gentleman who left the message was a New Yorker, on a brief visit to the provinces.

The Pennsylvania Hospital has received the sum of $4,000, and the Woman's Hospital of Philadelphia $3,000, from the estate of the late Mr. John George.

Yorkville Medical Association.—The following officers have been elected for the ensuing year: President, Dr. C. J. McGuire; Vice-President, Dr. J. F. Mowell; and Secretary, Dr. J. Blake White.

New York Post-graduate Medical School and Hospital.—Dr. Joseph O'Dwyer will give a course of instruction on intubation of the larynx on Wednesdays and Saturdays, at 3 P.M., at this institution.

A Doctor's Suicide.—Every house in Inverary, Scotland, belongs to the Duke of Argyle. Opposition to His Grace means banishment. Its government is delegated to a certain councillor, James Wyllie, who is the Duke's factor and chamberlain, and chairman of a co-operative store the greater portion of whose capital belongs to the Duke. The town council consists of the Duke's men. They are called the "concur" members, because they always say ditto to every motion of the factor, chamberlain, and storekeeper. Three years ago the medical officer reported the overcrowded state of the burgh. He was dismissed from his position as medical officer and his dwelling was taken from him. This persecution so weighed on him that he killed himself, and the house from which his wife and his children were ejected still remains unoccupied, as a warning, presumably, to all such meddlers. So says *Truth*.

Reviews and Notices of Books.

Practical Clinical Lessons on Syphilis and the Genito-urinary Diseases. By Fessenden N. Otis, M.D., Clinical Professor of Genito-urinary Diseases in the College of Physicians and Surgeons, New York, etc. New York, 1886.

This edition of Dr. Otis' work is merely a reprint of the publication issued in 1883 by Bermingham. It is now published by the author for the convenience of those who wish to make themselves familiar with his views and methods of practice. A true second edition, embodying the usual changes, eliminations, and additions made necessary by progressive science, is promised by the author at a later date.

Surgical Diseases of the Kidney. By Henry Morris, M.A., M.B., F.R.C.S., Surgeon to, and Lecturer on Surgery at, the Middlesex Hospital, London. 12mo, 555 pages, with six chromo-lithographic plates and forty engravings. Philadelphia: Lea Brothers & Co. 1886.

This work contains an account of those renal affections which are likely to interest the surgeon. Malformations, injuries, and all diseases that may bring up the question of an operation upon the kidneys are discussed by the author in a very satisfactory manner. The methods of nephrectomy, nephro-lithotomy, nephrotomy, nephrorraphy, and aspiratory puncture are described in detail.

Mental Diseases. By Charles F. Folsom, M.D. Pp. 204. 1886.

These pages were a contribution to the "American System of Medicine," and reprinted for the students in the Harvard Medical School. The writer has done fairly well in covering so wide a subject in so few pages, and the book will probably prove a valuable adjunct in instruction upon this branch of medicine, the importance of which, unfortunately, is too much overlooked in a medical course.

Diseases of Tropical Climates. Lectures delivered at the Army Medical School, by William Campbell Maclean, M.D. Pp. 337. London: Macmillan & Co. 1886.

These lectures are written in the most graphic and interesting manner. In a way they are models. They are full of illustration, practical hints, and instruction of how to meet those diseases which often prove more fatal in decimating the ranks of the British army than its enemies. He considers as diseases of tropical countries, Malaria; Intermittent, Remittent, Enteric, Relapsing, Dengue, and Yellow Fevers; Insolation, Diarrhœa, and Dysentery; Cholera, Diseases of the Liver, and Guinea-worm. He devotes a chapter to the disease called Beriberi, which prevails on the Malabar coast, in Ceylon, as well as in other parts of India. He describes it as an exceedingly fatal malady, characterized by anæmia in an extreme degree, numbness and motor paralysis of the lower extremities, scanty and high-colored urine, general œdema, with effusion into the serous cavities, chiefly the pleura and pericardium, occasionally acute pain, and oppression at the epigastrium, death occurring suddenly, either from dropsical effusion into the thoracic cavities, failure of the heart, or embolism.

On Disorders of Digestion, their Consequences and Treatment. By T. Lauder Brunton, M.D., D.Sc., F.R.S. 8vo, pp. 389. London: Macmillan & Co. 1886.

Diseases of the Stomach and Intestines.

A Manual of Clinical Therapeutics for the Student and Practitioner. By Professor Dujardin-Beaumetz. Translated from the fourth French edition by E. P. Hurd, M.D.; with illustrations and one chromo-lithograph. New York: William Wood & Co. 1886. Wood's Library of Standard Medical Authors.

Dr. Brunton's work is not a systematic treatise, as might perhaps be supposed, but consists of a collection of essays and lectures, written or delivered by the author at different times. The author almost too candidly states that if any one should attempt to read his book straight through, he would probably throw it aside in disgust, because he has in some cases repeated himself. We would not pass so harsh a judgment. Every chapter of the work is worth reading, showing, as it does, an alert and ingenious mind stored with knowledge and experience. The first three chapters of the book consist of the Lettsomian Lectures "On Disorders of Digestion, their Consequences and Treatment." Then follow miscellaneous essays. The first two are on headache, neuralgia, and other nervous diseases connected with the teeth; on the pathology and treatment of some forms of headache. The author here gives some very interesting points regarding the headaches of digestive origin, the nature of migraine, reflex headaches, etc. Subsequent chapters are devoted to dyspepsia, the uses, etc., of fat; the physiological action of alcohol on vomiting; the action of mercury on the liver; the action of purgative medicines; the action of tonics, of alteratives; indigestion as a cause of nervous depression, etc. All the topics treated of are "live" ones, and are treated of in an ingenious, interesting, and suggestive manner. We can recommend the book most heartily, as likely to prove of absorbing interest and of much practical value.

Dujardin-Beaumetz's work is one of quite a different character. It aims to be a treatise on gastro-intestinal disorders, studied from a therapeutical point of view. The author gives us some pathology, therefore, but mostly treatment. The work is written in the form of lectures, and has the disadvantage, consequently of being somewhat diffuse. The author writes clearly, however, and his description of modes of treatment are all the better for the copiousness of detail. The book is enriched with many notes, which the editor has judiciously placed at the end of the different chapters. These notes, taken in connection with the text, evince a great deal of erudition, and make of the book a veritable encyclopædia of information upon the subject of which it treats. The author calls attention to the recent investigations which French physicians have made upon the subject of dilatation of the stomach and the generation of putrid products in that organ. He believes that the further study of this subject is going to lead to a great change in our ideas of many of the morbid phenomena attendant on dyspepsia. We congratulate Dr. Hurd upon having been the means of presenting to the profession a work likely to be of such service, and upon the excellence of his translation.

Traité Élémentaire d'Anatomie Médicale du Système Nerveux. Par Ch. Féré. Paris: Aux Bureaux du *Progrès Médical*. 8vo, pp. 495. 1886. Elements of the Medical Anatomy of the Nervous System.

There is undoubtedly a widespread desire on the part of physicians to learn the latest views regarding the anatomy of the nervous system, and Dr. Féré has undertaken to present the subject in such a manner as to make it interesting and intelligible to the average reader. The introduction of the qualifying term "medical" means, we take it, that the author intends to give, as he goes along, enough of neuro-pathology to make his work practical.

Dr. Féré has the virtue, which most French authors possess, of writing clearly, and he has had an excellent training in neurology under Charcot. His book is, therefore, as might be expected, a work of more than average merit. We cannot, indeed, find fault with it, except that in his description of the finer portions of the nervous system, such as the different tracts in the medulla, pons, and cord, he is not quite complete, and he does not bring out by diagrams, etc., the fibre-system of the brain and cord as well as might be wished. The illustrations also are not of the best. Still, we can, on the whole, heartily commend the book to the general reader, and we trust his audience in America will be a large one.

Handbook of Practical Medicine. By Dr. Hermann Eichhorst, Professor of Special Pathology and Therapeutics at Zurich. Volume I. Diseases of the Circulatory and Respiratory Apparatus, one hundred and three wood engravings. Volume II. Diseases of the Digestive, Urinary, and Sexual Apparatus, one hundred and six wood engravings. Volume III. Diseases of the Nerves, Muscles, and Skin, one hundred and fifty-seven wood engravings. New York: William Wood & Co. 1886. Wood's Library of Standard Medical Authors.

Professor Eichhorst has long been favorably known to the medical public of this country for his contributions to general medicine and nervous pathology. His book has had a favorable reception abroad, and it fully sustains the reputation of the author. There are three things which characterize the work and give to it a particular value: these are the copiousness of the therapeutical discussions and suggestions, the extremely complete and almost encyclopædic thoroughness with which the author goes over the field of medical pathology, and finally, the admirable presentation of the subject of diseases of the nervous system, in which Professor Eichhorst has achieved some special fame.

The abundance of the illustrations, there being a total of three hundred and sixty-six, adds to the attractiveness and clearness of the work. We should be glad to have learned who was the translator of these volumes, for he has evidently done his work carefully and well.

The Genuine Works of Hippocrates, Translated from Greek, with a Preliminary Discourse and Annotations. By Francis Adams, LL.D., Surgeon. In two volumes. Vol. II. New York: William Wood & Co. 1886. Wood's Library of Standard Medical Authors.

There is little new that can be said now regarding the works of Hippocrates. The present volume is hardly of so much interest as the first, yet most of it can be read with interest, if not profit. The best thing in it, perhaps, is the chapter on "The Sacred Disease." In this Hippocrates shows how thoroughly his mind was freed from the medical superstitions of the day, and with what a philosophical mind he can discuss questions of medical pathology. As for his aphorisms, we have long thought them rather poor things, as most attempts at being aphoristical when dealing with things complex and inexact must necessarily be.

The Hippocratic oath is an immortal production, and deservedly so. "The Law" is a brief tract which, if written nowadays, would be considered rather commonplace. We have said that Hippocrates' "Surgery," as the first two-thirds of this volume might be called, is of lesser interest than his medical treatises. It is, nevertheless, a tolerably complete work so far as fractures and dislocations are concerned, and the editor, Dr. Adams, a surgeon himself, says that in this nineteenth century

no other author has treated the same subject so completely.

The illustrations at the end of the volume deserve notice, if only for their showing the characteristic physiognomy of the ancient Greek.

RHEUMATISM: ITS NATURE, ITS PATHOLOGY, AND ITS SUCCESSFUL TREATMENT. By T. J. MACLAGAN, M.D. New York: William Wood & Co. 1886.

THIS work, which is one of the series of "Standard Medical Authors of Wood's Library," is an interesting and instructive consideration of rheumatism. The author regards the disease as miasmatic in origin as is malaria, and thinks that lactic acid is produced by the morbific action of parasitic organisms which have a predilection for fibrous and serous tissues, hence the reason of rheumatism affecting the joints and the pericardium. The author then proceeds to consider rheumatism of the vasculo-motor apparatus, and rheumatism of the locomotor apparatus. The efficiency of the salicyl compounds is due, he thinks, to the power which they have of combating the miasmatic organisms. Of all of these he prefers salicine. He says it is a bitter tonic, and has not the unfavorable action upon the stomach and heart of salicylic acid.

MANUAL OF DIETETICS. By J. MILNER FOTHERGILL, M.D., Edinburgh. New York: Wm. Wood & Co. 1886.

DR. FOTHERGILL'S name has come to be associated with matters of diet, and his book will command attention as from one who has much experience in an important and an hithertofore neglected subject in connection with the health of humanity. Food, as the writer himself states, has had its pre-scientific stage, when the question was one of the palate, and not of the digestion. To-day the degenerate descendants of the eaters of venison pasty and roast boar must think whether peptic glands and gastric juices are equal to the task demanded of them. It was not exactly "*eye of newt and toe of frog*" that made the witch-like food of Charles V. of Germany. He, nevertheless, revelled in roasted horse, cats in jelly, lizard soup, and fried frogs, as delicacies of his menu. If Dr. Fothergill had been the court physician, with his present enlightenment, he would have discoursed learnedly to that gluttonous monarch, and told him of carbo-hydrates, albuminoids, fat-salts, and just what combination of vegetable, flesh, and fish were requisite to produce a proper condition in that monarch's alimentary apparatus, such as should most conduce to his well-being, and, consequently, to that of his subjects; and his scientific discourse would have turned the mind of the Emperor from thoughts of tickling his palate to the intellectual delight which a modern can enjoy, as, for example, that of watching the process of digestion in a test-tube. It is said that, in countries where certain diseases are prevalent, the plants or trees which furnish drugs corrective of the same abound; so in this century of prevalent dyspepsia, the consideration of food, in a dietetic and scientific aspect, becomes one of the features of the time, necessity having again performed the maternal duty and brought forth her offspring, invention. To turn from these somewhat rambling considerations of diet, past and present, to Dr. Fothergill's book, we find food dealt with in all its aspects and relations. Condiments, beverages, stimulants, fluid foods, preserved, canned, and prepared foods, and artificial digestive agents each claiming a chapter. In Part II. he treats of foods for infancy, youth, adult life, and old age, and for all the diseases which are encountered by the physician. Dr. Fothergill is sometimes florid in style, a little loose in diction, and not always as exact in detailing his theories and giving directions as so scientific a work would lead the reader to expect; but these are minor blemishes, which are easily forgiven in view of the value of most of the information given, and the thought-awakening power of the material placed at our disposal. It will certainly turn the attention of the physician too exclusively devoted to medication to the valuable auxiliary to be found in a diet suitably adjusted to the case in hand.

MANUAL OF OPERATIVE SURGERY. By W. ARBUTHNOT LANE, M.B., M.S., F.R.C.S., etc. 12mo. Pp., 276. London: George Bell & Sons. 1886.

THE author of this manual is a demonstrator of anatomy, and the book itself smacks of the dissecting-room. Anatomical details are entered into with extreme minuteness, while the practical steps of the operations are almost entirely omitted. For example, in amputation at the middle of the thigh, it is much more important that the operator should draw down and cut short the tendons and nerves, than that he should know that he is cutting small branches of specified cutaneous nerves. The best sections are on ligations of vessels and excisions of bones and joints. Many recognized operations, such as litholapaxy, and Ogston's operation for flat foot, are not even mentioned. Nothing is said as to the importance of antiseptic details. An operative surgery without this is much less interesting than the play of "Hamlet" with *Hamlet* left out. To the general practitioner the book is of no use, while the practical surgeon will find it very unsatisfactory.

Reports of Societies.

MEDICAL SOCIETY OF THE COUNTY OF NEW YORK.

Stated Meeting, February 28, 1887.

LAURENCE JOHNSON, M.D., PRESIDENT, IN THE CHAIR.

DR. P. A. MORROW read a paper on

THE DURATION OF THE SYPHILOGENIC CAPACITY IN RELATION TO MARRIAGE.

The fundamental characteristics of syphilis were two: First, prolonged virulence, and second, susceptibility to hereditary transmission. What is the duration of the contagious stage of syphilis? A century ago the majority of syphilographers would have answered that it began and ended with the chancre. At the present day it is impossible to fix a definite limit when the syphilitic organism is cleansed from the contagious element. The author of the paper then directed attention to the results of experimentation, and also to clinical evidence, which he regarded as conclusive that in the late tertiary stage the disease is still contagious. Especial attention was also directed to a paper published by Dr. F. N. Otis, in which the writer had taken a position that was opposed by an overwhelming mass of clinical testimony, that is, that after the termination of the second year it was impossible for a man, all manifestations of syphilis having disappeared, to communicate syphilis. Dr. Morrow believed that the doctrine of the paternal transmission of syphilis was supported by most authorities on general medicine, and also by most syphilographers.

He concluded that there was nothing constant in contagion, and nothing certain in heredity; that the modern division of syphilis into secondary and tertiary periods did not furnish a safe criterion concerning the contagious or the non-contagious character of the lesions; that the chronological completion of the secondary stage did not mark the definite disappearance of the virulent principle; that in the immense majority of cases the contagious activity of syphilis, and its susceptibility of hereditary transmission, ceased after three or four years, but there were well-authenticated cases in which it manifested itself as far removed as five or six years, and even later; that the precise date, in the evolution of the diathesis, when the limit of its contagious or transmissive power had been reached, did not admit of mathematical expression; that

this limit was materially influenced by the type of the syphilis, the character of the treatment, the presence or absence of certain conditions, etc., and that to fix the date at which a syphilitic man could marry with safety at three or four years, with or without treatment, and irrespective of the existence of specific lesions, was unwarranted by science or the teachings of experience.

The discussion was opened by DR. F. N. OTIS, who maintained that all the processes of syphilis were processes of growth, characterized by cell-proliferation non-inflammatory in character, and that when the contagious element had been removed the disease was at an end; that beyond the secondary period of syphilis, however long that may be proved to be present, there was no contagion; that all the lesions of the tertiary period of syphilis were free from the contagious element, and were simply sequelæ of the disease; that the period at the end of which marriage could take place with safety had, after thorough treatment, been fixed by the profession throughout the world as three or four years; that there should be, after thorough and prolonged treatment, an interval of a year or eighteen months, during which, without treatment, no syphilitic manifestation had appeared. These were statements in which all believed. For himself, he believed that the person was beyond the contagious stage of the disease at the end of three years, if proper treatment had been carried out. He claimed that, in view of the enormous mass of evidence presented, and of the general experience of authorities, wherever syphilis had been communicated at a period later than three or four years, it would be shown, in such cases, that the true source of the disease was in a lesion less than three years old.

DR. R. W. TAYLOR confined his remarks to three points: First, the length of the contagious stage of syphilis; second, can the arbitrary line be drawn upon one side of which it can be said that the disease was contagious and upon the other non-contagious; and, third, the course and contagious character of syphilis in its bearing on the question of marriage. The key-note to the contagiousness of syphilis could be summed up in the word treatment. If taken early, and treated thoroughly, the contagiousness, in ninety-nine out of a hundred cases, could be destroyed at the end of two or two and a half years. Of course, a papular syphilide might occur as late as the fifth or sixth year, and precocious tertiary lesions might be contagious; but these were very exceptional cases, and in them no syphilographer would think of permitting marriage. Again, there was no law that could be laid down as to the contagiousness and non-contagiousness of syphilis, uninfluenced by treatment. Each case, treated or not treated, must be considered by itself, with reference to all these important questions, and the question of marriage, if influenced by the decision of the physician, should not be decided until all these points had been most carefully studied. If circumstances be such as render postponement of marriage impossible, impregnation should be forbidden until the requisite length of time had been passed under treatment to destroy the contagiousness of the disease.

DR. E. B. BRONSON thought that there was nothing more uncertain in medicine than prognosis in syphilis. The uncertainty with reference to duration was exceedingly great, and it was impossible to say when the power to propagate the disease will have ceased. He was unwilling to believe that the disease was extinct because its manifest virulence had disappeared. There was no doubt, however, that there was a gradual diminution of the virulence of the poison of syphilis. He was also unwilling to admit that syphilis without symptoms may exist. He believed that treatment for three or four years should be adopted.

The discussion was closed by Dr. Morrow and Dr. Otis, who endeavored to reconcile some mathematical calculation concerning Fournier's statistics, and also some quotations from Dr. Otis' paper.

DR. F. R. STURGIS then read a paper on

THE SUPPOSED VIRUS OF THE CHANCROID,

in which he argued that there was no virus in this lesion, and that the supposed virus was really the result of acute inflammation. It was purely a local lesion, and its peculiarity was its capacity for auto-inoculation and its power for propagation.

DR. R. W. TAYLOR said that Dr. Sturgis' paper marked an epoch, as it was diametrically opposed to the summary of his article in the "International Encyclopædia of Surgery."

He was glad to have the support of his esteemed contemporary on a doctrine which was first enunciated by the late Dr. Bumstead, in a paper read in Philadelphia in 1876, and in the discussion of which he participated, and sustained the views of its eminent author by the results of his own independent observations. He was pleased to learn that the seed then sown had taken root, even at this late day.

DR. OTIS was entirely in accord with the author of the paper with regard to the non-specific character of the chancroid.

DR. E. B. BRONSON protested against the sweeping theory that the chancroid was the product of inflammation. There was an independent sore, and that independence implied a virus.

DR. TAYLOR said that deductions founded upon absolute facts could scarcely be classed as theories.

THE PRESIDENT cited a case of bubo following preputial herpes.

DR. STURGIS said that he wished to carry the view even further than had been done by Dr. Bumstead, and then the discussion was closed by Dr. Sturgis and Dr. Taylor in an endeavor to settle whether or not the views advanced in the paper were opposed to those published in the article in the "Encyclopædia of Surgery."

THE PRESIDENT called the Vice-President, DR. DRAKE, to the chair.

DR. C. C. RICE read *the report from the delegates to the Medical Society of the State*, which was ordered entered upon the minutes.

DR. O. B. DOUGLAS then read the report of the special committee appointed to investigate

THE CHARGES OF THE PRESIDENT AGAINST THE BUREAU OF VITAL STATISTICS OF THE HEALTH DEPARTMENT.

The committee found that "physicians have had cause for complaint in the *manner* in which certificates have, at times, been returned for correction or alteration, and in the carelessness of clerks in requiring unnecessary changes in certain cases. In the judgment of the committee, when corrections are necessary the request for such should be sent to the physician by special messenger or under seal, and not a verbal demand be given the undertaker to be sent through friends of the deceased to the physician. All who have charge of issuing burial permits should be competent medical men, and be under special control of the superintendent, who could then be held accountable for their acts."

Signed by the whole Committee, Drs. Daniel Lewis (Chairman), John W. Warner, Wm. M. McLaury, John S. Warren, and O. B. Douglas (Secretary).

The report was adopted.

The Secretary announced the death of Joseph Cushman, M.D., February 15, 1887, and Louis F. Schultze, M.D., February 8, 1887.

Drs. Douglas, Johnson, and Drake called attention to the urgent necessity that all the members of the Society be at once active with their influence in favor of the passage by the Legislature of the bill known as

THE PURRINGTON BILL,

which was being opposed fiercely by quacks from the city of New York. The bill appeared in THE MEDICAL RECORD for February 26, 1887.

The Society then adjourned.

NEW YORK ACADEMY OF MEDICINE.

SECTION IN SURGERY.

Stated Meeting, February 14, 1887.

ROBERT F. WEIR, M.D., CHAIRMAN.

TUBERCULAR SYNOVITIS OF THE SHEATHS OF TENDONS.

DR. A. G. GERSTER presented a patient whose case illustrated, in a striking manner, the possibility of treating successfully, by the aid of antiseptic surgery, affections which, previous to the work begun by Mr. Lister, were regarded as the *noli me tangere* of surgical art. In particular, the sheaths of tendons were not invaded with the knife, and therefore the special interest in the case presented, that of a medical student, twenty-five years of age, with good family history, who noticed, in November, 1884, on waking one morning, that he was unable to straighten the fingers of his right hand. Swelling and pain developed and increased on use, but subsided somewhat on giving the hand and wrist rest, yet the patient could extend the fingers only with considerable difficulty. On the whole, an increase of the swelling of the wrist was noticed.

In August, 1885, a similar condition developed, affecting the flexor side of the left hand, noticed first in the palm, gradually increasing in intensity, until finally the swelling appeared above the wrist, and the fact was soon established that the swelling on the flexor side of the forearm communicated with that of the palm of the hand.

The disease of the left hand and wrist was the more troublesome of the two, and his grasp was difficult and painful. He finally sought advice of Dr. Adler, who referred him to Dr. Gerster, who diagnosticated tubercular synovitis of the sheaths of the flexor tendons of the left hand and of the extensor tendons of the right hand, and advised operative treatment, as at that stage all other measures had failed to afford relief. Accordingly, on December 30, 1886, Dr. Gerster operated on the right hand. Although he had intended to operate on both hands on the same day, he was prevented from doing so by an urgent and important surgical case, and postponed the operation on the left hand until January 27, 1887.

The operation consisted in making a diagonal incision five and a half inches in length over the entire length of the swollen hand and arm, through the skin, fascia, and sheaths of the tendons. As soon as the sheaths of the tendons were incised, a yellowish, orange-colored fluid escaped, and it at once became visible that they were all very much thickened by a gelatinous material, soft and pearly in places, and in other parts rather opaque, and that the tendons themselves were covered, to a great extent, by the same material. In some places the tendon and its sheath were agglutinated to each other. One after another of the tendons was raised out of this bed, and the mass of gelatinous substance was completely removed. After each tendon and its sheath had been cleaned thoroughly, the physiological order was observed in uniting the wound, sheath with sheath, fascia with fascia, and skin with skin, and the hand then laid upon a splint and kept in an elevated posture. The operation was rendered bloodless by the Esmarch bandage, which is indispensable, and irrigation with a bichloride solution was kept up constantly. The wound was dressed antiseptically, and healed entirely by primary union. No febrile reaction occurred. The splint extended only to the base of the fingers, and the patient was directed to keep his fingers moving constantly. Doubtless the entire cavity filled with blood which became organized. The result had been *restoration of function completely.*

A similar operation was performed on the left hand, as stated, January 27, 1887. The dissection was much more difficult than it was upon the extensor surface, because it was necessary to divide the superficial part of the palmar arch, draw the branches of the ulnar nerve to one side, etc.; nevertheless, there was no serious difficulty in removing the mass. The only difficulty encountered was in releasing that portion of the tendons which passes underneath the transverse metacarpal ligament. Volkmann, who performed the operation twelve years ago, recommended the passing of a piece of heavy rubber drainage-tube under the ligament and forcibly seesawing until the whole was dislodged. Dr. Gerster tried this plan, but found that it was of no service whatever to him, and therefore he was obliged to dissect the soft parts close up to the ligament, incise a portion of the ligament, and then draw the tendons out. He finally succeeded in freeing the tendons from the mass completely by dissection.

Union of the wound was accomplished, as in the other operation, and the prospect was that the result would be as good as in the other hand. There was active extension and flexion, although not yet so free as in the right hand.

In both instances the first dressing was changed on the *tenth* day after the operation. Although there was no microscopical examination in this case, Koenig has already made it very probable that in all cases these masses are tubercular in character.

THE CHAIRMAN had been attacking these hygromata almost as heroically as had been described by Dr. Gerster, and had opened above and below, and scraped out thoroughly with the spoon for the purpose of dislodging the tubercular material. He had failed in several cases, as he had succeeded in several. The thoroughness with which the operation is performed, and the early movement of the fingers, he regarded as most important features of these cases. In several instances he had proven the material to be tubercular, bacilli having been found with the microscope.

DR. GERSTER had a similar case one year ago at Mount Sinai Hospital, the difference being that the affection was located on the extensor side of both hands. After delivery, for the woman was advanced in pregnancy, he operated on both sides at the same time, and the result was as good as in the case of the patient presented.

DR. V. P. GIBNEY presented a specimen [see p. 264] of

ACUTE EPIPHYSITIS OF THE HIP.

The cases which he had met with had been those in which the active stage had been passed, and all inflammatory conditions had subsided. English writers recommend early opening of the swelling, and then protecting the parts by mechanical appliances, so that the acetabulum can be saved. Generally the cases occur in children less than six months old, an abscess forms that finally opens, and then the damage has been done. At the beginning he would open the swelling freely and relieve the periosteum, and then put the limb in a good position and keep it fixed long enough to allow some kind of anchylosis to occur. At all events, such a plan of treatment would save the patient from the shortening.

These cases are frequently regarded as cases of congenital dislocation, and until someone happens to see a cicatrix, and then get the history, it might be so regarded and the case dismissed. But many of them can be traced to an acute process occurring early in life. The cases which are first seen in the late stage may give evidence by scars that there have been abscesses. There is only one case reported where it has been found that the disease was tubercular.

DR. A. B. JUDSON said that although the seat of the initial lesion and the structures subsequently involved are the same in acute epiphysitis and chronic osteitis of the hip, in acute epiphysitis there is an entire absence of reflex muscular contraction and rigidity of the joint, which are constant clinical features of the ordinary form of hip disease. In the cases which he had seen not only were the muscles relaxed, but, in addition, the limb lay completely everted, reminding one of the position assumed in fracture of the neck of the femur in the adult, and suggesting the diag-

nosis of separation of the epiphysis of the head of the femur followed by suppuration and disease of the femur. But an injury of the joint, no matter how violent or extensive, is seldom followed by destructive disease of the bone. It may therefore be believed that some of the cases of so-called diastasis attended with suppuration are simply instances of acute epiphysitis.

After recovery from acute epiphysitis the joint is left in a condition very different from that which follows hip disease. There is shortening from loss of a portion of the length of the femur, as sometimes happens after hip disease, but instead of fibrous anchylosis, which is often the result of hip disease, there is, after acute epiphysitis, a remarkable degree of preternatural mobility, the hip-joint being as flexible, though strong and useful, as it is in congenital dislocation of the hip. In fact, the diagnosis is not always easy between congenital dislocation and the results of acute epiphysitis. If scars are present, there is an increased probability that the preternaturally mobile joint has been the seat of acute epiphysitis, and in the absence of scars it is not impossible that there may have been acute epiphysitis without an external discharge. In a case which he had seen several years after the acute stage, there was no scar, but a history was given of a purulent discharge from the vagina, which may have followed perforation of the acetabulum, as in the case of double hip disease reported several years ago by Drs. Poore and Gibney.

Dr. Jacobi asked how long the duration of the cases was before the formation of abscess.

Dr. Gibney replied that an average duration was from two to three weeks; they are acute, and soon come to the surface.

Dr. Jacobi would like to know whether or not there were cases which were less acute, even subacute, with but little fever and pain. If such cases occurred he could well imagine that internal treatment directed to the formation of bone, by means of the administration of phosphorus in small doses, in substance (not the phosphates or phosphites), might be of service. He had been in the habit of giving phosphorus internally in subacute and chronic bone disease of every description since seventeen or eighteen years ago, when Wagner described his well-known experiments in fractures treated with and without the internal use of this drug, and it had always appeared to him that the cases ran a shorter course when phosphorus was administered.

Dr. F. A. Castle then exhibited

A NEW SPICA BANDAGE

which he had been led to devise in the treatment of a case of gluteal abscess in which the ordinary spica failed to make the requisite amount of pressure and retain its position.

Dr. J. D. Bryant then read a paper on

MODERATE DILATATION OF A URETHRAL STRICTURE FOLLOWED BY ABSCESSES OF THE TRUNK AND LIMBS.

The patient was twenty-four years of age, and a merchant with good family history. There was no history of injury. He had had repeated attacks of gonorrhœa between 1875 and 1885, many of which were much prolonged. There was no positive history of gleet in the intervals, although it probably occurred. In 1883 the common symptoms of urethral stricture made their appearance, and in 1884 the presence of stricture was determined by a physician who cured it by gradual dilatation. The patient was rebellious not only this time, but at other times subsequently, and ceased treatment as soon as a comparative degree of comfort had been secured. At no time had the stricture been dilated above No. 13 English. There was also a history of repeated chills, followed or attended by fever, and associated with previous dilatation of the urethral stricture.

Under cocaine Dr. Bryant found a stricture three inches from the external meatus that admitted a No. 5 English bulbous bougie. At the bulbo-membranous junction was another stricture, which admitted only a whalebone guide, four of which were introduced side by side, and then dilatation was carried up to 5 and 8 of the conical gum-elastic bougie. This was done under cocaine, was performed without difficulty, and was attended by only a trifling amount of pain. The hemorrhage was only sufficient to discolor the mucus and oil that were expelled from the urethral canal.

Three days afterward Nos. 5 and 8 were introduced as before, without pain or difficulty. No. 10 encountered greater resistance than did 8 at the previous sitting, and some hemorrhage followed at the first micturition, when he had a chilly sensation attended with great prostration while sitting in the water-closet. During the next ten days he had irregular, chilly sensations and fever, and when Dr. Bryant, at the end of that time, saw him, the patient's pulse was 90, his temperature 102° F., and his countenance haggard. There were two phlegmonous swellings on the left thigh, one anterior, the other posterior, one above the crest of each ileum, a small one on the inner side of the right arm near the axilla, and a small one beneath the right nipple. Those on the thigh, and one of those above the crest of the ileum, suppurated profusely and discharged an abundance of offensive pus tinged with blood. The others disappeared soon afterward, except one, which remained for weeks, and then passed away without suppuration. The constitutional symptoms attending the suppuration were not severe, the temperature varying from 99° to 102° F., with occasional chilly sensations, without sweating, until near the close of the suppurative process. At this time the patient had a mild attack of pneumonia, with some pleuritic effusion, from which he made a satisfactory recovery.

The kidneys at no time gave any evidence of disease.

The most interesting and important feature of the case was the occurrence of phlegmonous swellings, and the question arose whether similar abscesses were consequent or accidental complications of the treatment of urethral stricture. If a consequent complication, how are they produced? Can they be prevented? Do they affect prognosis as regards cure and the life of the patient?

If an accidental complication, how are they to be avoided? It seemed to him that in this case they were accidental, or an indirect complication.

If they are a consequent complication of a septic nature, they must depend either upon the absorption of some poisonous element existing in the urine that comes in contact with freshened surfaces or on a subsequent thrombosis at the site of the stricture. If consequent on urinary sepsis, their prevention demands that the course of the urinary stream be changed, as, for instance, causing the urine to escape through an opening made in the perineum behind the site of the stricture.

He did not believe that urethral medication directed to the prevention of urinary sepsis by absorption was of practical importance.

If the phlegmonous swellings were accidental non-septic complications, no attempt at internal treatment should be made, provided the conditions of the case will admit of delay, until the patient has been thoroughly fortified, in a general sense, when either gradual dilatation or cutting can be resorted to—cutting, in his opinion, being the better of the two plans. Internal incision, if the obstruction be in front of the bulbo-membranous junction; external, if behind this part.

The Chairman said that Dr. Bryant's case was very interesting, and the complication described was a comparatively rare one, although not unique. He had met with the same conditions prior to the advent of antiseptic surgery, but recently had not had any urinary complications whatever. Multiple abscess, following urinary operations, slight or severe, dates back to Velpeau, who attributed them to a peculiar poison which comes from the urine or from a fault on the part of the surgeon. The

Chairman was convinced that it came from one of these two sources. We could guard our patients against it somewhat by the use of antiseptic injections at the time of the operation. He had more faith in this method than Dr. Bryant had expressed, and accordingly injected the urethra with a mixture of iodoform and sweet-oil, and always smeared the instruments with vaseline and iodoform. After the operation is concluded, he injects the bladder with a solution of bichloride, 1 to 10,000, and flushes the urethra as the instrument is withdrawn. In this manner he felt confident that he had made urethral absorption the exception rather than the rule. He had, in cases in which there had been a chill with rise of temperature, introduced a soft instrument and washed out the bladder and urethra.

Dr. F. N. Otis thought that Dr. Bryant was correct in his opinion that in his case the abscesses were only a coincidence. He had never met with a case in which abscesses occurred as the result of the manipulation mentioned or as the result of any urethral operation, although he had heard of such cases. His experience had been more in the way of dividing strictures than dilating them, and although it covered many hundreds of cases, he had yet to see the first abscess as the result. Rightly or not, he had attributed this immunity to the very great care which he had given to his instruments, passing them through an antiseptic solution before using them, perhaps through the flame of an alcohol lamp, carefully and thoroughly cleaning every instrument before it is put away, etc.

He had had but very little trouble from urethral fever, and had attributed this absence to the use of the catheter after the operation.

In those cases in which the patient has been accustomed to use the catheter or sound he always uses it, and in the cases where he had failed to use it, and the patient has passed his urine without the catheter, chill has frequently occurred, perhaps for the first time three or five days after the operation. It seemed to him that the catheter was one of the best means of preventing urethral fever.

He had also found that urethral fever had been prevented by quinine, and therefore he uses the remedy after his operations. He had not practised irrigation of the bladder as carefully as the chairman had mentioned, although in cases where habitual disinfection was required, on account of decomposition of the urine, he had been very careful to wash out the bladder; but where it was in good condition he had not thought that it was necessary. He had avoided operating where a urethral discharge was present, and had taken pains to have the patient lay up until at least the discharge was reduced to the least quantity and there was no pain. In cases where it had been impossible to reduce the discharge so that it was not painful, he had kept up the use of antiseptic injections after the operation.

The Chairman asked Dr. Otis if there had been much pain produced by introducing the catheter early after internal urethrotomy.

Dr. Otis said that he had very seldom found that it produced pain. Sometimes there was difficulty in introducing it on account of coagulated blood in the urethra, but he had taken pains to dislodge the clots of blood, and where there had been much difficulty he had allowed the patient to urinate rather than attempt to pass the catheter.

Dr. F. R. Sturgis thought that there was no sepsis present in Dr. Bryant's case. He would suggest the possibility of the presence of sugar in the urine, and that question he based on the history of a single case only which had fallen under his observation. In the event of sugar being in the urine, he would decline every operation except perineal section. In Dr. Bryant's case, whether the urine were diabetic or not, he would perform only the perineal section, as he thought it quite probable that there would be a return of the difficulty if he attempted to dilate. He thought that the Chairman was over-cautious in washing out the bladder and flushing the urethra, although cleanliness in the highest degree was commendable.

With regard to the use of quinine, he gave it his most hearty adherence, and believed that it would prevent a chill in nine out of ten cases, giving five grains two or three hours before the operation, and nine grains with one grain of opium after the patient had come from under the influence of the anæsthetic.

Concerning the use of the catheter, he thought that in the larger portion of cases the patients were as well off without as with it. According to his experience, the introduction of the catheter had been painful. He also favored sudden dilatation to the cutting operation, and had practically abandoned internal urethrotomy on account of the chill, hemorrhage, etc., liable to follow. Certainly his experience had been unfortunate in urethrotomy for deep strictures, for which he now always performs perineal section.

Dr. R. W. Taylor agreed fully with the Chairman with regard to the use of quinine, and in the main with reference to the antiseptic precautions. He believed, however, that it was best to treat urethral stricture by dilatation when it was possible to do so. Some years ago he had a case in Charity Hospital in which he operated with Maisonneuve's instrument, which he preferred to the divulsing instrument of Holt, and the patient had phlegmonous inflammations in the thighs, arms, and trunk.

He also called attention to a case of septic absorption from the urethra after a cutting operation.

Dr. Castle said, with regard to antiseptic applications to the urethra, that vaseline, cosmoline, etc., really belonged to the paraffines, which vary very much as to solidity. Paraffines can be obtained which are limpid and also free from rancidity. Olive-oil should never be used in making antiseptic solutions, unless the antiseptic is sufficiently powerful to disinfect the oil itself, which is almost invariably impure.

Dr. Otis said that he had been using the liquid forms of paraffine with great satisfaction. He had always used quinine in the form of suppositories—ten grains of the bisulphate with one-quarter of a grain of morphine immediately before the operation.

The Chairman said that he had fallen back to the use of the tincture of aconite, three minims two or three times a day, but always with morphine. All use more or less of morphine after these operations, and he thought it quite probable that the benefit came from the morphine rather than from any of the drugs with which it was combined.

Dr. Bryant said that the urine in his case was not examined until after the recurrence of the chill. It did not contain sugar, and the kidneys had not given any evidence that they were diseased.

With regard to the use of quinine, he had given it in the different ways and in varying doses, and he had reached the conclusion that it did not exert any salutary influence. He also used oil combined with carbolic acid or iodoform for urethral injections. With regard to dilatation, divulsion, and the cutting operations, he was inclined to think that, when his patient was in a proper condition for another operation, he should first wash out his urethra carefully, and if a chill followed, he should cut his stricture and allow the patient to take the chances.

Dr. Castle suggested that there might be some disturbance of the trophic nerve-centres in Dr. Bryant's case to account for the trouble. If so, any operation would be liable to be followed by such a history as had been given.

Dr. R. W. Taylor then read a paper on

THE RELATION OF FIBROMATOUS INFILTRATION OF THE SKIN TO KELOID,

which was really a sequel to his paper published in the *Journal of Cutaneous and Genito-Urinary Diseases* for February.

The present contribution pertained to the *etiology*. Traumatism he believed to be an important cause of moluscum fibrosum, and he cited two cases to sustain the opinion, in which the wounds were sufficiently severe to damage the subcutaneous layer. In the fibromatous tumors there is no tendency to recurrence after removal, which is unlike keloid.

THE CHAIRMAN referred to two cases of keloid *without* the spur-like processes.

DR. TAYLOR exhibited an illustration of hyperplastic cicatrices. True keloid disease originates in superficial irritation, and is essentially different from hyperplastic cicatrix.

THE CHAIRMAN asked Dr. Taylor concerning the character of the little tumors which appear at suture holes sometimes and are so annoying.

DR. TAYLOR said that his studies had convinced him that keloid varies less from the typical form than any other variety of connective-tissue new-growth. The confusion which surrounds it is due to the fact that the various forms of hypertrophic or hyperplastic cicatrices are classed as keloid or fibro-keloid. The word keloid should be used only in the sense meant by Alibert, for circumscribed patches of shiny, pinkish elevations of the skin from which claw-like processes jut out as do the claws of a crab. Wherever this condition is seen, be the origin spontaneous or due to traumatism, the term keloid should be applied. When hyperplastic or hypertrophic processes invade scars, points of suture, and lines of incision, and are limited to their area, they should be called hypertrophic cicatrices. Should they show a tendency (as they sometimes do) to extend by claw-like out-shoots, then they come within the meaning of keloid.

The Section then adjourned.

NEW YORK NEUROLOGICAL SOCIETY.

Stated Meeting, February 1, 1887.

C. L. DANA, M.D., PRESIDENT, IN THE CHAIR.

DR. C. L. DANA reported a case of

PACHYMENINGITIS HÆMORRHAGICA, WITH LARGE MENINGEAL HÆMORRHAGE PRESSING CHIEFLY ON LEG-CENTRE—RIGHT HEMIPLEGIA, TOTAL PARALYSIS IN LEG, APHASIA, HEMIANÆSTHESIA, CONVULSIONS LIMITED TO ARM AND FACE.

The patient was a woman about sixty-eight years old, and came into the hospital with complete motor aphasia, and unable to give any previous history. She had no paralysis at first, but three days after admission she had a general convulsion, followed by right hemiplegia—total in the leg, and some right-sided anæsthesia. On the second and third days she had a series of brief localized convulsions, involving the face bilaterally and the right arm. These were carefully observed. The movements were clonic, beginning in the muscles of the lower jaw. The other peculiarities were these:

1. The pupils remained small during the convulsions. When wider convulsive centres are discharging, as in general epileptic convulsions, the pupils are dilated.

2. The conjugate deviation of the eyes was at first, and very temporarily, toward the side of the lesion, and away from the paralyzed side. The head also was turned toward this side. When this occurs it is ordinarily spoken of as a paralytic deviation. This does not explain it here, since almost immediately the head and eyes were turned strongly to the opposite and paralyzed side. The speaker suggested that the first deviation is due to an inhibition of the activity of the associated nuclei of the third and sixth nerves that innervate the external and internal recti of the two eyes. There are many facts which tend to show that the first stage of convulsion is a transient paralysis, due to a sudden discharge of inhibition centres. These are of a higher, more developed class than the centres for motor discharges, and would be affected first. We would have then loss of consciousness, inhibition of motion and muscular relaxation; then motor discharges and tonic and clonic convulsions.

3. The temperature on the paralyzed side was one degree higher than normal, and higher by a degree than that of the other side. This is the rule in intra-cerebral hemorrhage and hemiplegia; but the speaker was not aware that it has been established in cortical hemiplegias. In meningeal hemorrhages the temperature is often below normal, according to Minot.

4. The presence of hemianæsthesia.

The patient died on the third day. Post-mortem showed chronic pachymeningitis over both convexities, but more on the left side. On the left convexity there was a very extensive, fresh meningeal clot, pressing upon and flattening especially the upper half of the central convolutions. Brain-substance normal.

CORTICAL EPILEPSY WITH TEMPORARY APHASIA—SYPHILITIC GUMMA COMPRESSING THE LEFT SECOND FRONTAL CONVOLUTION IN ITS LOWER POSTERIOR PART—RECOVERY.

DR. M. ALLAN STARR related the history of the case. Charles S——, thirty-two years of age, had always been healthy and a hard worker. He had an attack of sciatica four years ago, and three years ago had a hard chancre. He had never had convulsions or nervous affection. Family history good. During November, 1886, and the first two weeks of December he did not sleep well, was slightly dizzy, his head ached a good deal, chiefly at night. December 15th, while walking with a pail in his right hand, he suddenly let it drop, losing all power in the hand and arm. There was numbness in the hand. He was unable to speak to his companions. He did not feel dizzy nor notice any pain in the head; he did not lose consciousness nor fall. He understood his friends' questions, but could not answer. Power in the hand and arm, and speech returned within half an hour. The next morning he went to work, as well as usual. Two days later a second attack occurred, beginning with a numb feeling in the tips of the fingers, gradually extending up the hand and arm. Then the fingers became rather forcibly flexed and stiff, but by a voluntary effort he could straighten them. No clonic spasms of the fingers, and wrists and elbow were not bent. The numbness and stiff feeling soon extended to the face, which was drawn to the right side with some force. Speech was again lost. No loss of consciousness. The attacks lasted about twenty minutes. Such attacks had occurred every other day, then every day, and finally thrice a day up to January 3d. Examination by Dr. Starr showed slight paresis, and slight tactile anæsthesia in right hand; no affection of face or speech. The diagnosis was reached of gumma in the membranes, resting upon the main surface, giving rise to irritation and consequently to an occasional nervous discharge, but not of sufficient size to cause any destruction. Location of tumor was equally clear; the relative situations of the cortical centres for the arm, face, and for the movements of speech in the lower two-thirds of the anterior central convolution and in the posterior part of the third frontal convolutions were likened to a reversed L. All these centres were irritated during the attacks, the irritation sometimes beginning in one, sometimes in another.

The treatment ordered was, first, inunction of mercury, and, second, iodide of potash daily, in divided doses. He had one attack two days after beginning treatment, but since that time he had had no return of the symptoms. Iodide of potash was still being taken.

DISCUSSION ON DR. STARR'S PAPER.

DR. SEGUIN had seen several cases whose symptoms resembled those of the case recorded in Dr. Starr's paper. The prognosis of even non-syphilitic cortical lesions with this symptomatology was not absolutely unfavorable.

One of the cases to which he referred was that of a Cuban who came to his clinic about nine years ago. He had never had syphilis, yet he described epileptic attacks of the true cortical kind, such as have been obtained by experiments upon animals during the last few years. The hand would become numb, and then the seat of a vibratory sensation; finally, contraction would occur in the hand, when the face, and almost simultaneously the leg, would be affected, and he would lose consciousness. According to his friend's account general convulsions then occurred. He had had quite a number of these seizures; yet examination showed no anæsthesia, no affection of the optic nerve, and, so far as the speaker could recollect, no motor impairment. The patient had received a preparation composed mostly of the bromide of potassium, to which a little of the iodide was added. He improved immediately, and four years ago the attacks ceased.

The patient had also been the object of the bracelet experiment. He was a powerful man, and had exerted great force, arresting many attacks in this way. The speaker was satisfied that syphilis was absent, while the amount of the iodide was too small to explain a cure upon the ground of a syphilitic affection.

DR. SHAW referred to a case seen first four years ago. While at work as a jeweller the patient fell off his bench in a convulsion. The face and the left arm were confined; the leg was not affected; sometimes only the side of the face was affected. He had seen many of these attacks limited to the side of the face in his office. The patient complained of numbness in the arm and the side of the face, and the speaker felt sure that the tactile sensibility was not as good upon that as upon the other side. The patient denied syphilis. Upon ophthalmoscopic examination the nerves were found pale, and the visual field restricted in its upper part. There was no change until about six months ago, when, without loss of vision, was found to have choked disk. This had gone on to atrophy, and the man was now blind; there was no syphilysis. From the choked disk, of course, the speaker had now diagnosed a tumor, but he referred to the case on account of the anæsthesia and the spasms and their resemblance to those in Dr. Starr's case.

DR. SACHS referred to the case of a man who, some years ago, while working upon the capitol at Albany, had fallen some distance, was found unconscious, but recovered. A few weeks later he developed symptoms which alarmed his friends, and he had now some of the physical and nearly all of the mental signs of general paresis; the irregular pupils, the facial tremor, the tremor of the tongue, and the deteriorated mentality. Every three or four weeks this man had an attack of numbness, beginning in the fingers and creeping up the right arm to the face. There never were convulsions.

DR. DANA thought that cortical epilepsy might develop in idiopathic epilepsy, without an appreciable lesion. He recalled a case, that of a young man who was kicked on the front of the thigh by a horse; clonic spasm of the leg developed, similar to that of cortical epilepsy. Tingling and numbness of the arm and face followed. Three or four years true hemieleptic attacks, during which he lost consciousness, developed; most of the time he had only the leg convulsions. There was no history of syphilis. Apparently cortical epilepsy was developed, as was true idiopathic epilepsy in other cases.

DR. E. C. SEGUIN read a paper entitled

CONTRIBUTION TO THE PATHOLOGY OF THE CEREBELLUM.

A detailed account of one case was given, and specimens, gross and microscopic, illustrating its pathological anatomy, were shown. Three other cases of cerebellar disease were briefly presented, as card specimens with further anatomical demonstrations. The following is a summary of case one: Male patient, forty-five years old at time of death; a retired officer of the United States army. Eighteen years before death illness began with headache, not strictly occipital, and one or more seizures of an epileptiform or apoplectiform character. These were followed by impaired vision and more or less continuous headache—fronto-occipital. Later appeared nystagmus and typical cerebellar titubation; slight slowness of speech. There was no distinct paralysis, true ataxia, anæsthesia, vertigo, or mental impairment. During several years, from 1877 to 1883 or 1884, the only symptoms were slight frontal headache, defective vision, partial atrophy of both optic nerves, nystagmus of varying form, slight slowness and indistinctness of speech, increased patellar reflex, and titubation.

In February, 1885, an epileptiform seizure left behind it partial left hemiplegia without contracture and anæsthesia. Death on April 22, 1885, preceded by a set of distinctly bulbar symptoms; increased dysarthria, dysphagia, salivation, polyuria; also increasing stupor.

Lesions-cyst of cerebellum, destroying the caudo-ventral part of the middle lobe—not involving frontal third of the vermis superior, penetrating into the right lateral lobe as far as the nucleus dentatus—not destroying it, and probably exerting only slight pressure upon the floor of the fourth ventricle. There were also found: 1. A small hemorrhagic focus two inches in diameter in the ventral half of the pons on the right side, in the midst of the pyramidal fasciculi. This explained the left hemiplegia, and from it, caudad, could be traced a complete descending degeneration of the right pyramidal tract into its subdivisions in the spinal cord. 2. Very extensive arteritis obliterans of the encephalic vessels, causing numerous—mostly symmetrical—foci of softening in the cerebral hemispheres. The only system-degeneration which could be traced to the loss of substance in the cerebellum was a moderate reduction in the size of the opposite left olive and partial atrophy of the right restiform body.

The author called attention to several conclusions to be drawn from a study of these four cases:

1. As to diagnosis. Tumors of the cerebellum produce very variable symptoms; but one symptom, viz., cerebellar titubation, is, as claimed by Nothnagel in 1876 or 1877, pathognomonic of a destructive lesion of the middle lobe of the cerebellum, more especially its caudo-ventral masses. In Dr. Seguin's cases optic neuritis or atrophy had not failed, which was in marked contrast to his experience with tumors of the cerebral hemispheres, which do not usually cause lesion of the optic nerves (1 to 5 or 1 to 4). Vomiting was a frequent symptom; occipital headache and rigidity of muscles of the back of the head were less frequent, but very valuable symptoms.

2. As to therapeutics, three of the patients had obtained repeated relief from serious symptoms—paroxysms of headache, vomiting, and epileptiform attacks—by the use of iodide of potassium in doses of from thirty to sixty grains three times a day.

3. As to prognosis, two of the patients did not die of their cerebellar disease (both cysts), but of complications; Case 1 of diffused arteritis obliterans and consequent softening in various parts of the brain (including impaired nutrition of the bulbar nuclei); the other case, No. 2, of an acute tubercular meningitis. Consequently we may hope, in a few cases, to cause or to witness an arrest of the cerebellar disease. The disorder in voluntary movements and the already developed lesions of the optic nerves are of course irremediable.

DR. BRADNER spoke by invitation. He had been the attendant in the case of the child to which Dr. Seguin had referred. He had not prescribed the washing out. It had been done by a prominent physician of the place. He had done it a number of times during three weeks, but had then refused, believing that the child had brain disease of some form. He saw the patient first in November. The vomiting was always in the morning. There was no pain connected with it then, although a frontal headache had developed during the last few months.

DR. PUTNAM-JACOBI referred to the recent collection of cases by Bernhardt. All cases published previous to 1884 had been collected by Nothnagel. Dr. Seguin's cases tended to confirm Nothnagel's laws. There were many resemblances between the symptoms of cerebellar tumor and those of tumor in other parts of the brain. The peculiar violence of the headache and the choked disk found in most cases of cerebellar disease might, she thought, be due to the increased pressure of a tumor confined by the tentorium. This element had not been commented upon, and she would like Dr. Seguin's opinion upon it.

Another point referred to the fact that the laws formulated by Nothnagel recognize the possibility of complete latency of the tumor, no symptoms at all being present when but one lobe of the cerebellum is affected, such symptoms appearing only when the tumor encroaches upon the central lobe. In one of Dr. Seguin's cases the tumor occupied the lateral lobe. Of course an indirect affection of the central lobe might be present even in such a case.

DR. LESZINSKY referred to a case to which he was called in consultation by Dr. Alexander. The boy had the typical gait of spastic paraplegia; any attempt to stand caused spastic contractures in the limbs. The ankle-clonus was present, and the knee-jerk was exaggerated. Later tremor developed, and paralysis of the abducens, of the fifth, and of the third nerves. Total blindness occurred. The nurse, a graduate of Bellevue, was positive that the child could see nothing. It died in a convulsion. Unfortunately the body was immediately frozen, and the specimen was unfit for sections. The tumor was found occupying one side of the cerebellum.

DR. STARR had had occasion some time ago to make a collection of cortical lesions from American literature. He had at the same time made a collection of cases of cerebellar disease from the same sources. As the data obtained but corroborated Nothnagel's results, he never published them. But Dr. Seguin having remarked upon the value of corroborative evidence, he would briefly refer to them now. From 1860 to 1884, 160 cases of cerebellar disease were reported in American literature. In only 40 of these were the symptoms and the autopsies described with sufficient accuracy to warrant conclusions. These 40 the speaker had quite thoroughly analyzed. In 4 there were no symptoms; in one of these there was congenital atrophy of the cerebellum, in 2 abscess, and in 1 a large cyst. Of the remaining 36 presenting symptoms there was headache in 36; inco-ordination in 25; vertigo in 20; vomiting in 18; blindness in 14; dim vision in 6; diplopia or strabismus in 7; deafness in 7; facial spasm or paresis in 4; hemiplegia in 9; general paralysis in 4; mental symptoms in 8; stupid, 7; mania, 1; convulsions in 7; sexual desire increased in 2. Males, 23; females, 17; ages, between one and twenty years, 11 cases; between twenty and forty years, 16 cases; between forty and sixty years, 9 cases; over sixty years, 1 case; age not stated in three.

In 2 of the 11 cases in which inco-ordination did not occur the lesion probably involved the middle lobe. In cases where inco-ordination occurred various parts of the cerebellum were involved, but the probability was that the middle lobe was affected in the majority. There were only 2 instances of increased sexual desire. Bernhardt had found but 1 instance in 90 cases of cerebellar tumor, and Nothnagel but two cases. The speaker thought that it might be thrown out as a symptom of cerebellar disease, and regarded as one of accidental occurrence. The escape from vertigo in Dr. Seguin's case was explained, perhaps, by the recent discoveries in the anatomy of the course of the acoustic nerve. This nerve served for the sense of hearing and the sense of space. The centre for hearing is in the pons. Edinger finds the centre for equilibrium in the cerebellum, to which acoustic fibres pass by way of the middle peduncle. From this centre the central tract probably passes onward to the superior peduncle. Dr. Seguin says that the superior peduncle escaped in his case. It is therefore natural that vertigo should not have occurred.

The tendency to rotation was an interesting feature in these cases. There was a tendency to fall or turn forward in 2 cases; the lesion was in both a tumor in the vermis in the anterior part. There was a tendency to fall to the right in 2 cases, in one there being a tumor in the left middle peduncle and in the other an abscess in the same part. There was a tendency to fall to the left in 2 cases, in one there being an abscess in the right middle peduncle and in the other a tumor in the left middle peduncle. A patient of Nothnagel, whom the speaker had seen in Vienna, when getting up in bed had always a tendency to turn to the right side. Nothnagel considered this due to vertigo. It was only present when the patient was erect. The patient felt as though about to fall to the left side, and hence turned to the right. This case had a tubercle of the left middle peduncle of the cerebellum. Nothnagel considered this symptom only produced by affection of the middle peduncle. In the two cases in the table where the tendency was to turn to the right, there was disease of the left middle peduncle; while in the two in which the tendency was to the left, in one the right peduncle and in the other the left peduncle was affected. No rule can therefore as yet be laid down as to the cause of this symptom.

DR. ENGLISH had had charge of the case which formed the subject of Dr. Seguin's paper, and he congratulated the Society upon the progress which had been recently made in the diagnosis and treatment of cerebellar disease. Early in 1878 Dr. Seguin had written him a letter, accurately diagnosing this case as seen on autopsy.

DR. SEGUIN closed the discussion. He was not surprised to learn of the little boy's fall, as he was a firm believer in the traumatic origin of these conditions. It was very difficult to obtain a history of fall. He could not give an opinion upon the question propounded by Dr. Putnam-Jacobi. In regard to ascribing the vertigo to the acoustic nerve he was not yet certain that the acoustic nerve had cerebellar origin. He thought it would be difficult to trace fibres through the lateral peduncle of the cerebellum, the vermis, and the anterior peduncle.

Correspondence.

OUR LONDON LETTER.

(From our Special Correspondent.)

PAROTITIS AFTER ABDOMINAL AND PELVIC LESIONS—INDURATION OF PRIMARY SORES IN WOMEN—ACTINOMYCOSIS IN MAN—COCAINE IN DENTAL SURGERY—A NEW SPECIAL HOSPITAL.

LONDON, February 14, 1887.

AT the last meeting of the Medical Society of London the greater part of the time was occupied with the reading of a lengthy paper, by Mr. Stephen Paget, on "Parotitis after Injury or Disease of the Abdomen or Pelvis." Mr. Paget is a younger son of the eminent surgeon, Sir James Paget, Bart., and the only one who has entered the profession, his elder brother being a clergyman in the Church of England. He is already known as a rising young surgeon by his published papers on various surgical topics. His recent paper may be regarded as a continuation or expansion of one published by him in *The Lancet* last year, in which he gave particulars of 60 cases of secondary inflammation of the parotid. He now brought forward 101 cases, all of them being secondary to abdominal or pelvic disease or injury. The antecedent diseases or injuries of other organs were distributed as follows: Of the urinary tract, 10 cases; of the alimentary canal, 18; of the abdominal wall, subperitoneal or peritoneal tissue, or peritoneum, 23; of

the generative organs (including temporary derangements, such as slight injuries, menstruation, etc.), 50 cases. Parotitis, when occurring after injury of the extremities, was always part of a general pyæmia. But, when occurring after abdominal or pelvic lesions, it was, in 93 of 101 cases he had been able to collect, an isolated event unaccompanied by any other inflammation. In only 15 of the cases was there distinct mention of "septic symptoms," "septicæmia," or "pyæmia." Thirty-seven cases died, but of these 3 were over eighty, 3 had cancer, 2 had perforation, 2 had strangulated hernia. Among the remaining 27 were cases of acute peritonitis, severe injuries, septicæmia, or pyæmia. The danger was thus not in the parotitis itself, but in the primary lesion causing it. This form of parotitis had no period of incubation. It had been observed on the first day after the primary lesion, on the nineteenth, and on the intermediate days. In one case it came on on the morning of the day fixed for an operation. When due to abortion or delivery, it seemed to come on later than when due to operations on the generative organs. The onset of this form of parotitis was rarely attended by much general disturbance. Rigors occurred in 4 cases; delirium or puerperal mania in 6. In most cases there was only a slight rise of temperature and no rigor. In only 78 of the cases was the termination of the parotitis recorded. Forty-five of these went on to suppuration. Of this number 24 died and 54 recovered. Thirty-three ended in resolution, with only one death among them, and this was the case of a patient with cancer. Mr. Paget remarked that as to the fatal cases of suppuration, they died, not because the parotitis went on to suppuration, but that this took place because they were going to die. The author concluded by discussing the various theories of the causation of the parotitis in these cases and did not admit that any one of them was entirely satisfactory.

Considerable interest was aroused at the Medical and Chirurgical Society on Tuesday last by the reading of a paper, by Mr. W. E. Cant, entitled "Some Clinical Observations on Induration in the Primary Lesion of Syphilis in Women." The paper was based upon some three or three thousand odd cases observed by the author while Resident Medical Officer at the Royal Albert Hospital, Devonport. The observations made extended over a period of between six and seven years. Induration of the primary lesion in women is generally admitted to be rare, but Mr. Cant's observations would show that it may in many cases be found when sought for. In women, he said, induration (when present) was not infrequently diffused a considerable distance into the tissues around, often very widely, not sharply defined from the surrounding tissues, nor circumscribed in the base of the sore itself. The character of the induration therefore differed widely from that of primary sores in men. The typical form of primary indurated sore in men (resembling a disk of cartilage set in surrounding soft structures) was rare in women. Every variety as to the degree of development of induration was met with in women, but in about one-third of the cases it was very slight. In a small number none existed throughout the whole course of the sore. Induration might occur at almost any period of the course of a sore. In only a few cases was it present in the early stage; in many cases it became most marked and developed toward the middle and latter part of the case.

Dr. Drysdale agreed with Mr. Cant that induration was much less common in women than in men, and remarked that the occurrence of induration might be influenced by the different condition of the genital organs in the female. In a hard chancre of the lip in a woman the induration might be "wooden." Even in the male many cases might exhibit but slight induration. As to the situation of the primary sores on the female genitals in his own experience out of 241 cases four-fifths occurred on the labia majora and minora. The initial hard sore might occur on the os uteri. He had not seen one on the vagina. Several speakers joined in the discussion. Mr. Cant, in his reply, observed that he had seen two chancres on the os uteri, one on the vagina, and some on the buttocks.

Mr. Cant's paper was followed by one by Dr. Hebb, in which he related the history of a case of actinomycosis in man, and described the morbid appearances found after death. In the discussion on this paper Dr. Theodore Acland remarked that the disease was not nearly so rare in man as it had been supposed to be. He had himself seen four cases, and about thirty cases of disease of the lung in human beings had been reported in Europe. The disease was very common in cattle.

A well-known dental surgeon, Mr. Morton Smale, has been making some further experiments with cocaine in relation to dental surgery. Previous experiments had not caused him to form a very high opinion of its value, but more recent investigations with stronger solutions have led him to view it more favorably. He now uses solutions of from ten to twenty-five per cent., and has employed it successfully for extractions, torsion of misplaced teeth, removal of live pulp, and to deaden the pain caused by wedging teeth apart for stopping purposes.

We are threatened with another special hospital. It is to be devoted to the treatment of diseases of the throat, ear, and nose, and its promoters have bestowed upon it the designation of "The London Throat Hospital." I understand its medical officers will consist chiefly, if not entirely, of those gentlemen who withdrew from the Hospital for Diseases of the Throat in Golden Square last spring, in consequence of the attitude of the Committee and of Dr. Morell Mackenzie. Six physicians and surgeons then resigned, and four at least of these are about to join the new venture. Rumor has it that they have founded the new hospital as "a rival show" to the old one. One or two outsiders are joining them, and some money has already been collected.

ADMINISTRATION OF QUININE IN BRONCHO-PNEUMONIA.

To the Editor of The Medical Record.

Sir: A recent discussion on "The Administration of Quinine in the Treatment of Broncho-Pneumonia in Children," by the members of the Northwestern Medical and Surgical Society of the City of New York, is remarkable, not only for what it contains, but equally so for what it does not contain. It indicates a decided modification of the views of some of the members, at least, who, in their writings in the recent past, strongly advocate the use of large doses of quinine for the so-claimed antipyretic effect.

On this occasion there was not a single voice raised in favor of giving large doses, while nearly every speaker confessed to the use of tonic doses only. The very great trouble met with in giving, even the tonic doses of quinine, was pictured very forcibly in the "fights" and "rows" necessary to compel the unwilling children to take the bitter drug; and the lamentable part was that, after so much labor, the rebellious stomach would almost certainly reject the medicine. One member had tried rectal suppositories, but another condemned that method as almost useless.

The method that seemed to meet with most favor was to disguise the unpleasant taste in syrup of wild-cherry; but anyone who has tried this combination well knows that it is not so very palatable that "children cry for it." Judging from the discussion referred to, the problem, "How to give quinine to children," would seem to be still unsolved.

I am surprised that the way out of this difficulty did not at once occur to almost every member of the Society. It was a singular oversight; and I am sure no one will be more surprised than they themselves, when they recall

the ease with which the difficulties of giving quinine can be overcome. For some years I have not attempted to give quinine to children by the mouth. The most simple and satisfactory way is by inunction with the *oleate of quinine*. It is an elegant and definite preparation, occasions no struggle in administration, and there is not the least danger of its rejection by vomiting.

BENJAMIN EDSON, M.D.

83 ST. MARK'S AVENUE,
BROOKLYN.

Army News.

Official List of Changes in the Stations and Duties of Officers serving in the Medical Department, United States Army, from February 20 to February 26, 1887.

TESSON, LOUIS S., Captain and Assistant Surgeon. Ordered for duty as Attending Surgeon at Headquarters, Division of the Missouri, and Examiner of Recruits at Chicago, Ill. S. O. 44, A. G. O., February 24, 1887.

BARROWS, CHARLES C., First Lieutenant and Assistant Surgeon. Resignation accepted by the President, to take effect February 17, 1887. S. O. 42, A. G. O., February 19, 1887.

BLACK, CHARLES S., First Lieutenant and Assistant Surgeon. Ordered from Fort Clark, Tex., to Fort Davis, Tex. S. O. 23, Department of Texas, February 18, 1887.

MASON, CHARLES F., First Lieutenant and Assistant Surgeon. Resignation accepted by the President, to take effect March 25, 1887. S. O. 44, A. G. O., February 24, 1887.

Medical Items.

CONTAGIOUS DISEASES—WEEKLY STATEMENT.—Report of cases and deaths from contagious diseases reported to the Sanitary Bureau, Health Department, for the week ending February 26, 1887:

	Cases.	Deaths.
Typhus fever	0	0
Typhoid fever	8	4
Scarlet fever	52	14
Cerebro-spinal meningitis	3	2
Measles	225	28
Diphtheria	82	23
Small-pox	21	2
Yellow fever	0	0

THE CONDITION OF THE LARYNX IN WHOOPING-COUGH.—Dr. Von Herff, while suffering from an attack of whooping-cough, made a series of observations on the appearances presented by his own larynx in this disease (*Deutsches Archiv für klinische Medizin*). He examined his larynx throughout the whole course of the disease, sometimes even during the attacks of spasm. The results of his observations were as follows: Throughout the whole course of the illness a slight degree of inflammation of the mucous membrane of the respiratory tract was seen to exist, extending from the posterior nares to the bifurcation of the trachea. In the earlier stages this inflammation took the form of a slight catarrh, but during the spasmodic stage it was very intense and widespread, and only slowly disappeared during convalescence. The intensity of this inflammation varied in different parts of the respiratory tract. It was specially well-marked over the mucous membrane covering the arytenoid cartilages and the cartilages of Santorini and Wrisberg, but was greatest over the back wall of the larynx between the vocal cords, as well as on the under surface of the epiglottis. The other parts of the larynx remained unaffected, the vocal cords themselves being quite intact. The hyperæmia, however, extended into the trachea, and could be distinctly seen as far down as the bifurcation. It was found that during every paroxysmal attack a small pellet of mucus could be seen lying on the back wall of the larynx, on the level of the glottis, on the removal of which the attack instantly ceased. Further, by irritating this part of the larynx by means of a sound, a spasmodic attack of coughing could be induced, simulating in every way the attacks of whooping cough. Irritation of the under-surface of the epiglottis had a similar, though less marked, effect. On the other hand, stimulation of other parts of the larynx was entirely without effect in producing the characteristic paroxysms of coughing. He is therefore of opinion that the inflammation of the mucous membrane in this interarytenoidal region is specially connected with the peculiar attacks of spasm in whooping-cough.

A SURGEON AND ARTIST.—In the current volume of "St. Thomas' Hospital Reports" there is an article by Mr. William Anderson, Assistant-Surgeon to St. Thomas' Hospital, which give a most interesting outline of the history of art in its relation to medical science. Mr. Anderson is one of the many accomplished members of the medical profession whose art studies form the relaxation and chief pleasure of a laborious scientific career. Few, however, have ever combined in an equal degree the accomplishments of an anatomist and surgeon with those of profound erudition, conscientious research, and refined artistic taste. Mr. Anderson's great work on the "Pictorial and Glyptic Arts of Old Japan" is unique in European literature, and we are glad to see that its high merits have recently been fully recognized by such important organs of opinion as the *Quarterly Review* and the *Times*, as well as by the leading art and literary journals on the continent. On the subject of Japanese pictorial art he may justly claim to be the first living authority, and he has been the pioneer in the study of the pictorial arts of the great schools of the far East, which possessed, until recently, masters like Kanaoka, Motonobu, Tanyu, Okio, Hokusai, and Sosen. The works of these artists, which are still rare in Europe, may fairly compare with those of Cimabue, Velasquez, Snyders, and Landseer. In the present article Mr. Anderson reviews the services rendered by art to science in the elucidation of anatomy and pathology. Beginning with a reference to the anatomical studies of Leonardo da Vinci and Raphael, he passes on to the great work of Vesalius, "Humani Corporis Fabrica," which was illustrated by the pupils of Titian; to the Amsterdam folio on the anatomy of the human body, by Bidloo; to the "Tabulæ Anatomicæ" and other anatomical works of J. Casserius and Spigelius, illustrated by Fialetti; to the finely illustrated "Osteographia," of Cheselden; the "Tabulæ Sceleti," of Albinus; and the "Anatomia Uteri," of William Hunter.—*British Medical Journal.*

THE LAW OF THE DETERMINATION OF SEXES; KISCH'S MODIFICATION OF THE HOFACKER-SAELLER LAW.—When the husband is at least ten years older than the wife, and when at the same time the wife is within the age of highest reproductive power (twenty to twenty-five), there will be a very distinct excess of boys born over girls. This excess will be marked, but less distinct, when the husband is at least ten years older than his wife and she is over twenty-six. When the husband is older than the wife, and she has not attained the age of highest reproductive power, the female births will be in excess. This excess of girls born over boys is most marked when husband and wife are of the same age. Yet when the wife is the elder there is a distinct excess of male births. Dr. Kisch admits that both his own and Hofacker's statistics are not extensive enough to warrant very decided scientific conclusions. His interesting paper is published in the *Centralblatt für Gynäkologie*, January 22, 1887.

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Original Articles.

SYPHILIS AS AN ETIOLOGICAL FACTOR IN DISEASE, ESPECIALLY IN CONNECTION WITH PULMONARY LESIONS OR SYPHILITIC PHTHISIS.[1]

BY WILLIAM HENRY PORTER, M.D.,

PROFESSOR OF CLINICAL MEDICINE AND PATHOLOGY IN THE NEW YORK POST-GRADUATE MEDICAL SCHOOL AND HOSPITAL.

MR. PRESIDENT AND GENTLEMEN: Latent syphilis, both of the acquired and congenital variety, as an etiological factor in disease, has occupied my attention for a number of years past, and a large amount of clinical and pathological material has been collected, bearing not alone upon its influence on the pulmonary tissue, but upon every organ and tissue of the body. Pulmonary syphilis is best defined as a condition of the lungs in which there is a progressive thickening of the walls of the air-vesicles, preceded or accompanied by a hyaline metamorphosis of the capillary arterioles. This change is often associated with inflammatory deposits and gummy formations, which, degenerating into cheesy masses, become encapsulated or liquefy, and give rise to cavities. The first condition is best classified as a syphilitic pneumonia, the second as a syphilitic phthisis.

This subject involves many somewhat difficult and apparently contradictory problems. It is hoped that this paper and its discussion may prove of profit not only to the profession, but to humanity at large.

The chief argument is the relative importance of the syphilitic poison as an etiological factor in producing a progressive consolidation of the pulmonary tissue, which, in turn, is followed by a progressive liquefaction of the lung substance.

If the term phthisis is to be limited to tubercular lesions only, then there is no syphilitic phthisis. But if the term phthisis can be applied in its broader sense to a progressive consolidation to be followed by progressive softening with destruction of lung-tissue and the development of cavities, then this paper will clearly illustrate the frequency of syphilitic lesions of the lungs deserving the term phthisis.

The subject requires not only a study of syphilitic lesions in connection with the pulmonary organs, but also in connection with all the visceral organs, so that a pathognomonic histological structure can be clearly demonstrated by which a sharp differentiation can be made between the three lesions which heretofore have been confounded, viz., syphilitic, tubercular, and sarcomatous neoplasms.

The three may be defined as follows:

First. Syphilitic gummata are vascular growths in which the original and newly formed blood-vessels have thickened walls, due to a peculiar hyaline metamorphosis, which, in some instances gives rise to an obliteration of their lumen and the formation of surrounding concentric layers of fibrillated connective tissue and round cells, thus forming a gummy tumor. The characteristic feature of this new-formed tissue is its peripheral vascularity, the vascular walls of which are greatly thickened by this same hyaline metamorphosis. These neoplasms tend to progressively enlarge and form a distinct capsule, while the centre often degenerates and becomes caseous. At other times there is this same hyaline thickening and a permanent dilatation of the lumen of the vessels which causes an increased and irregular nutritive action of the part, which is followed by a general interstitial thickening, the contraction of which causes the frequent pockmarking of the liver.

Second. The miliary tubercles as defined at the present time, are "non-vascular nodules which do not grow beyond a certain size, and which, having attained a certain stage of development, undergo cheesy degeneration," and they now become the seat of septic infection, break down, and rapidly destroy the surrounding tissue.

Third. The sarcoma are composed of embryonic connective-tissue elements, but they do not primarily degenerate, neither do they produce a hyaline thickening of the vessels, but, on the contrary, there is often an abundant development of new and thin-walled vessels, which frequently rupture and give rise to hemorrhagic extravasations, and these may undergo retrograde changes.

From this description it will be seen that the three neoplasms may undergo a cheesy change and liquefaction. If this part only be examined the three might be confounded, but outside of the degenerating centre the sarcoma can at once be excluded.

This brings us to the chief consideration, which is to disprove the histological and clinical identity of syphilitic and tubercular lesions of the viscera, and especially in connection with the lungs or phthisis.

The author's necropsy researches have developed a firm conviction that there is a very great frequency of syphilitic lesions of the internal organs.

At the same time it is generally stated that syphilis is comparatively harmless in its nature, and is often spontaneously cured, or readily yields to treatment.

These two affirmations certainly indicate a discrepancy at some point. The first question to be considered is: How is the poison introduced into the system?

That syphilis is frequently acquired in what might be called the legitimate or venereal way no one will probably question. In fact, some have gone so far as to assert that most young men run through a course of syphilis quite as frequently as they do one of measles, and treat it in the same trivial manner.

This would make from sixty to eighty per cent. of the male population syphilitic, to say the least. If syphilis has a tendency to spontaneous cure, or is easily amenable to treatment and is not contagious in the so-called tertiary stage little harm might come from this primary indulgence. But an extended clinical observation and an abundance of pathological material strongly tends to disprove the harmless nature of the syphilitic poison and establishes a malignancy hardly equalled by any other known disease.

The following histories are frequently obtained: The husband syphilitic, the wife not, abortion follows each conception without any appreciable cause, and without any evidence of the wife being affected.

This has been explained by the poison affecting the placental structure upon the fœtal side only when derived from the father. If the poison originate from the mother's side the maternal side of the placenta only will be affected; if both father and mother be syphilitic the whole structure of the placenta will be involved.

Since noticing this assertion I have had several opportunities for confirming this fact.

[1] Read before the Section on General Medicine and Pathology of the New York Academy of Medicine, February 15, 1887.

One striking example was observed in which the mother gave birth to a child at the seventh or eighth month without any known reason for the premature delivery. Macroscopic examination of the fœtus showed a dropsy of the cord and abdominal ascites. Microscopic examination of the placenta and visceral organs gave positive evidence of a syphilitic lesion, in the shape of marked hyaline thickening of the vessels on the fœtal side of the placenta. The same condition was also well marked in the vessels of the liver, spleen, kidneys, and lungs. There was a well advanced intra-lobular cirrhosis of the liver. The vessels of the placenta and all the fœtal organs gave evidence of being waxy, both upon the application of iodine, and by the methyl-green test.

In this case there was a positive absence of any syphilitic disease in the mother, and she had been perfectly well while carrying the child up to the time of its sudden and unexpected expulsion. Such instances as these, which are frequently observed, are rather strong pathological proof in favor of direct contamination from the father without maternal poisoning.

Clinically, it may be said to originate from the father's side without contamination of the mother by frequently repeated instances such as the following: The husband contracts syphilis, supposes himself cured, marries, and his first child is strong, vigorous, and apparently free from infection. Symptoms of visceral syphilis develop, and each succeeding child shows more and more positive evidence of contamination until the fifth dies of specific marasmus a few weeks after birth. From this time on each conception is followed by an abortion without appreciable cause. During all this time no history of a primary lesion, or secondary, or tertiary symptoms can be discovered in the mother, although repeatedly sought for.

Again, the husband supposes himself cured, but his wife constantly aborts, and without any apparent cause; close examination reveals pulmonary syphilis, or syphilis of some other organ. The husband is brought well under treatment, the wife ceases to abort, and conception is followed by an apparently healthy child, the mother receiving no treatment, as no symptoms are detected in her. The husband ceases treatment, becomes broken in constitution, or dissipated, abortions follow succeeding conceptions.

In these cases treatment of the mother has no effect, but treatment of the husband invariably relieves the symptoms. Such clinical observations point strongly toward the father as the source of the poison without primary infection on the part of the mother.

The large amount of pathological and clinical proof of this nature naturally suggests the probable incurable nature of syphilis and tends to disprove the inertness of the poison in the latent periods and also proves its transmission from father to offspring.

That the surface manifestations can be caused to disappear by treatment is unquestionable, but how many specialists follow their cases through the intermediate period and on to the dead house and then work up the pathological results?

When visceral lesions develop the case naturally falls into the hands of the general practitioner or the pathologist.

To the above methods of contamination can be added all the well-known accidental chances for inoculation, which are by no means few nor far between.

This question of the disease being an acquired or an inherited vice is one of unquestionable importance. A careful study of this point, for a number of years, has led the writer to believe that pulmonary syphilis in adults is a very common disease, and that it is due to either an acquired or inherited taint, the latter being nearly, if not quite, as frequent as the former. The ground for the belief that the disease is frequently inherited is shown by the number of cases in which it appears in young persons under ten or twenty years of age, whose chastity cannot be doubted, and in whom no primary symptoms have ever appeared. In opposition to this view may be urged a primary contagion, passing unnoticed, or a direct transmission by kissing some older infected person; these are outweighed, however, by the absence of primary and secondary symptoms.

Dr. John Ferguson, of Toronto, reported a number of cases[1] where the disease occurred in young children, and where, all other treatment having failed, the symptoms yielded to an anti-syphilitic *régime*, and where the father, at a later period, inquired if his children's condition could have been influenced by his having had syphilis.

All this is proof positive of the transmission of syphilis during its latent period from a father to his offspring without the mother showing any signs of the disease. The latent period of syphilis, which lasts from ten to twenty years, during which there may or may not be exacerbations, succeeds to the active state, and usually occupies that period of life in which the larger number of children are generated, thus probably accounting for the number of cases where positive symptoms are present without any evidence of primary contagion. A positive proof of the occurrence of this disease, in the form of a pneumonia or phthisis, may be found in the fact that these complications yield quickly and favorably to anti-syphilitic treatment. The larger percentage among females, especially among the unmarried and virtuous, seems to favor inheritance. These views are those of a clinician and pathologist, and vary considerably from those advanced by syphilologists. The clinical history of a case of this character is explained by the pathological lesion, and *vice versa*. Whether it be of the acquired or inherited variety may be in doubt, but inheritance from the father's side is in keeping with the biblical prophecy of descent even to the third and fourth generations. The recognition of syphilis in causing and maintaining disease, especially when the pulmonary organs are the point of attack, would indicate that a large number were syphilitic and not tubercular in origin.

The method for determining the characteristic histological lesions of syphilis was as follows. The cases were divided into three distinct classes:

First.—Those in which there was a positive history of a primary syphilitic lesion, and in which positive symptoms of visceral involvement followed.

Second.—Those in which there was a positive absence of primary or inherited infection, and in which no symptoms could be found that would lead to the suspicion of an acquired or inherited syphilitic vice.

Third.—Those in which the history was not absolutely positive in either direction. This third group had to be thrown out, as it would raise the question of other causes for the lesions found.

In the first group all the visceral lesions, whether of the lung, liver, kidneys, brain, or spinal cord, showed a uniform appearance upon microscopic examination, viz., a marked hyaline metamorphosis of the original as well as of the newly formed vessels. Distinct neoplasms were quite common, varying in size from a millet-seed to a small orange. These gummy formations had a sticky feel, with a tendency to liquefy in the centre, and to enlarge and form a distinct and fibrillated vascular capsule. In the capsule the interfibrillated spaces were packed full of corpuscular elements, and were freely supplied with small vessels, the walls of which were thickened and distinctly hyaline. In the soft centre of the gummy neoplasm the bacilli, as described by Lustgarten, were always found.

In the second group this hyaline thickening was never present. There was no tendency on the part of the tubercular neoplasm to form a distinct capsule, and the granulating mass was non-vascular. Having reached a certain size the tendency was to break down and cause

[1] Phila. Med. News, January 17, 1885, p. 66.

further pulmonary destruction. And the bacillus tuberculosis was present.

After studying a large number of cases in this isolated way, and finding a uniform lesion in all, and its absence in all cases when there was no syphilitic taint, the firm conviction has been developed that these pathological changes are positively diagnostic of a syphilitic vice, as the cause of the diseased condition; that by these lesions we can discriminate accurately between syphilitic and tubercular lesions of the lungs. This vascular change has been attributed to other causes, such as alcohol-, tea-, coffee-drinking, etc. Some have even suggested making it a new disease. But when studied in this isolated way, all syphilitic cases showed these lesions, and in no other condition were they to be found, although carefully looked for; this makes them positive evidence of syphilis.

The changes found in the lungs are somewhat similar to those of tubercular phthisis, and caused Niemeyer to remark:[1] "It may be difficult to decide whether the lesion be of a syphilitic origin or not." The lungs may be free, but, as a rule, they are more or less bound to the chest-walls and diaphragm by newly formed connective tissue, so that the pleural space may be completely obliterated. The pleura itself may vary from one-eighth to one-half of an inch ($3\frac{125}{1000}$ to $3\frac{1}{2}$ millimetres) in thickness. The greatest thickening is at the apices. After bisecting the lung the following changes are found: The main lobes, and often the lobules, are separated by distinct bands of newly-formed fibrillated connective tissue, which is not the case in a normal lung. The bronchi, particularly the smaller ones, undergo the same change, while the bronchial glands are indurated and pigmented; the latter, however, is only a coincident lesion. There are numerous cheesy-looking masses which are recognized by a trained eye as gummy formations. Their cut surfaces have a sticky feel and a laminated capsule, which, when they have attained considerable size, is quite distinct. The smaller granules have a similar appearance, and often look as though they could be readily shelled out. These neoplasms may vary, both in size and shape, sometimes occurring as large as a hen's egg, and sometimes so small that they look like the miliary tubercle. They may occur in masses, forming cheesy-looking patches, or they may occur in single round and isolated bodies. These masses are separated by degenerated pneumonia or by an interstitial thickening of the pulmonary substance. The early stage is characterized by a diffuse interstitial thickening of the pulmonary tissue, often associated with a degenerative pneumonia peculiar to this disease. In the latter stages cavities are not infrequent, and these are also found in the apex or high in the superior lobe.

The advanced cases are the ones that are usually found on the necropsy table, while the earlier types are not infrequently associated with intercurrent disease or surgical conditions; but here the histories are very incomplete, often being passed without attracting any attention. A striking illustration of this was found in the diabetic case already published, where, in looking for a tubercular process, a typical pulmonary syphilitic lesion was found. These pathological proofs of the apex—rather than the base and anterior portion of the lung—being the point of invasion are contrary to the ideas of some previous writers, but it has been invariably so in all the cases examined by the writer, both in the post-mortem room and at the clinic. These facts also explain the physical signs which are so marked during life, and substantiate their truthfulness. Macroscopically this lesion is differentiated from the tubercular by the peculiar cheesy and granular gummy formations which have a tendency to encapsulation, and look as though they could be readily shelled out and easily separated from the surrounding pulmonary tissue.

[1] Niemeyer's Text-book of Practical Medicine, vol. ii., p. 771. New York, 1881.

The microscopic appearances are varied and numerous, and the first thing that attracts the attention is the extensive new formation of connective tissue.[1] In many places broad bands are found closely resembling tendon tissue, and intervening between these tense layers there is a universal thickening of the pulmonary tissue, which also involves the vascular walls. The yellow elastic fibres are larger, and consequently appear more abundant. In many of the cases there is little or no pigmentation found which can be traceable to inorganic substance or to blood. The absence of the first, of course, is indicative of the fact that the interstitial thickening is not due to the irritation of carbon, iron, stone, or any of the other inorganic substances, as in the case of some varieties of fibroid induration. The absence of blood pigment, on the other hand, is positive proof that it is not due to chronic congestion or impeded blood-flow. This also dispenses with the idea that the dyspnœa must be due to the stagnation of the blood.

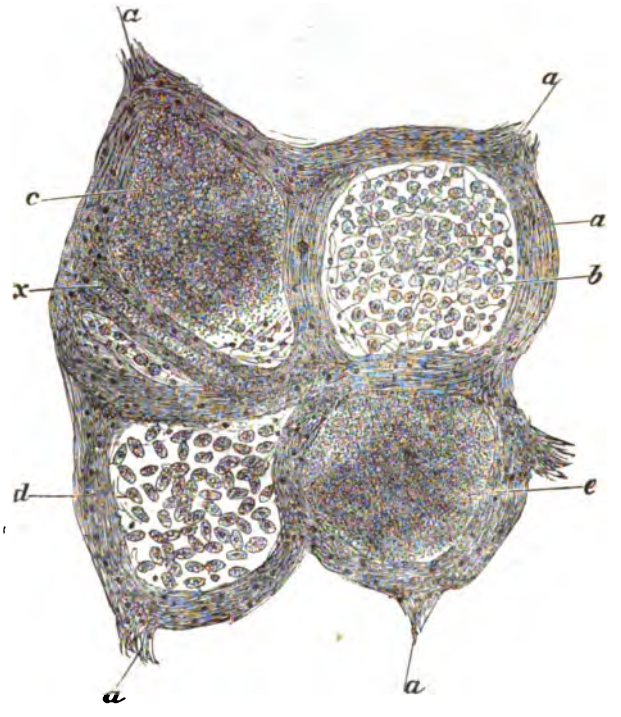

FIG. 1.—Syphilitic Pneumonia. *a*, thickened vesicular wall; *b*, an air-space showing red hepatization; *c*, an air-space showing gray hepatization; *d*, an air-space showing catarrhal desquamation of the epithelial cells; *e*, an air-space showing the degenerative pneumonia of syphilis; *x*, a blood-vessel between two thickened bands of a fibrillated vascular wall.

The thickness of the vascular walls varies from one twelve hundredth of an inch (20.833 μ) to one two hundredth (24.999 μ), but in the majority of the cases they are one eight hundredth to one six hundredth of an inch (31.250 μ to 41.666 μ) (see Fig. 1, *a*). In a number of instances the capillaries were seen in the centre of these thickened bands (Fig. 1, *x*), the walls of which were thickened independently of the vascular tissue. When the vessels were distended with blood, as in Fig. 1, *x*, the thickness of the tissue intervening between the lumen of the blood-capillary and the wall of the air-sac could be measured, and was found to be from one twelve hundredth to one four hundredth of an inch (20.833 to 62.500 μ).

This would naturally impede the free and easy interchange of gases between the two cavities, and would explain why the dyspnœa in this disease was so profound.

In addition, the connective tissue presents four characteristics microscopically:

1. Dense bands of white fibrous tissue with few corpuscular elements.

[1] A portion of this paper and the cuts first appeared in the New York Medical Journal, August 1, 1885, p. 114.

2. A less dense tissue studded with numerous small, round, inflammatory corpuscles, having an average diameter of one one hundredth of an inch (4.166 μ). At other points, this same connective tissue was thickly set with oat-shaped corpuscles one thirteen hundredth of an inch (19.230 μ) long and one eight thousandth of an inch (3.002 μ) broad.

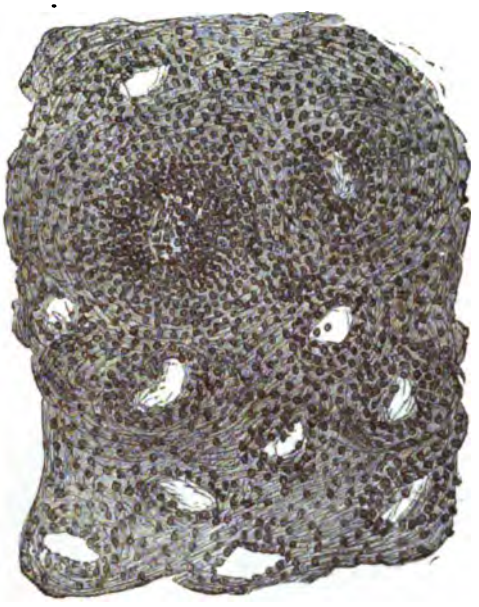

FIG. 2.—Large Gumma, showing the outer portion and cellular infiltration; the open spaces represent spots of softening.

3. The same inflammatory basement substance, interspersed with round nucleated corpuscles, one forty-five hundredth of an inch (4.166 μ) in diameter, which, taken alone, looked not unlike a round-cell sarcoma.

4. The thickened bands had a granular and degenerated appearance.

In many of the ultimate bronchi there was marked fibroid thickening, and many of the vesicular spaces were filled with an inflammatory exudation which presented a variety of appearances: 1. The air-spaces were filled with red blood-disks, leucocytes, desquamated epithelium, and fibrillated fibrin identical with that found in the second stage of a lobar pneumonia (Fig. 1, *b*). 2. Others were filled with decolorized round cells, as in gray hepatization of lobar pneumonia (Fig. 1, *c*). 3. Others were filled with large, round, distinctly nucleated epithelium cells, with a diameter varying from one fifteen hundredth to one two thousandth (Fig. 1, *d*). 4. Others contained a granular degenerating material which would not stain (Fig. 1, *e*).

The marked feature of this change was that all four conditions were irregularly intermingled as though in each air-sac it ran its course independently of all the rest, going regularly through the red and gray hepatization; at this point degeneration, rather than resolution, set in. The thickened walls prevent absorption, and the degenerating inflammatory products probably account for the copious expectoration.

This process is best classed as a degenerative pneumonia and one peculiar to syphilis. This peculiar pneumonia, accompanied by dilatation of the bronchial tubes, explains the absence of both dry and moist râles. The dilated and moist condition of the bronchi accounts for the absence of sibilant or sonorous sounds which are so common in the ordinary forms of interstitial pneumonia. This same condition of affairs accounts for the absence of the crepitant and subcrepitant râles, because the walls of the bronchi are not able to approximate each other and cause the sounds.

My opinion has always been that these râles were due to the opening and shutting of the ultimate bronchi, and a careful study of the physical signs and of a number of sections has still further convinced me that this is the way in which these sounds are produced. But I do not care to say that this is the only way in which they are produced, as they are often heard in certain stages of pleuritic inflammations, and there is no point of diagnosis between the two that is practical. The pleuritic râle, however, is very much less frequent.

It is well known that there is no tidal motion to the air beyond the third division of the bronchi. Beyond this point the air is changed by diffusion and by an anatomico-physiological law.

The trachea and bronchi are lined throughout with columnar ciliated epithelium, and the current of motion produced by these cilia is from within outward at the periphery of the lumen, while the central column of air is constantly moving downward.

It is by this action of the epithelium that the major part, if not the whole, of all inflammatory exudations into the air-sacs and smaller bronchi are brought up to the larger bronchi, where they can be influenced by the tidal air. The mass of sputum is pushed up until it reaches the under surface of the true vocal cords, where it irritates the peripheral sensory filaments of the superior laryngeal nerve, through which it is reflected back to the cough-centre, when a deep inspiration and a spasmodic or complete closure of the chink of the glottis follow. This is in turn followed by a forced inspiration with the glottis closed, during which the glottis opens, allowing a sudden escape of a large quantity of air under a very high pressure. The result of this is that the mass of sputum is driven through the rima glottidis into the larynx, mouth, or outside world, according to the force of the inspiratory act. This constitutes what is known as coughing, and is simply a dislodgement of the contents of the superior portion of the trachea. Irritation of the peripheral fibres of the pneumogastric in the pleura or bronchi will produce a dry or hacking cough. A thorough appreciation of these anatomico-physiological laws and their application to pathological conditions is absolutely essential for the selection of proper therapeutic agents.

Professor Thomas E. Satterthwaite first called my attention to the true value of the ciliated epithelium. The large gummata have a peculiar laminated, fibro-vascular, connective-tissue periphery, which tends to encapsulate

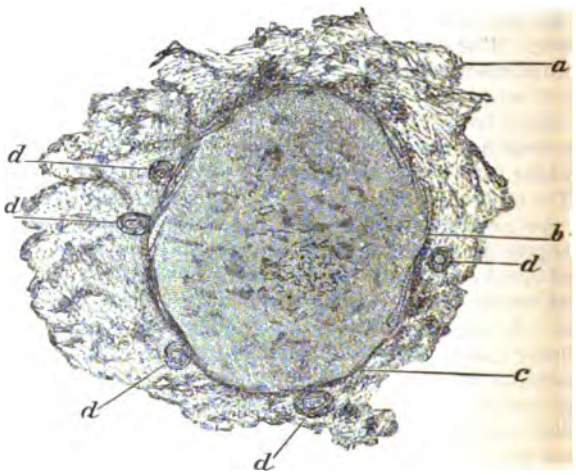

FIG. 3.—Miliary Gumma, showing cheesy centre, fibrillated connective-tissue capsule and hyaline thickening of blood-vessels. *a*, Surrounding pulmonary tissue; *b*, cheesy centre; *c*, sharply defined fibrillated connective-tissue capsule; *d*, thickened capillaries showing hyaline thickening.

and isolate their granular centres. The surrounding pulmonary substance is the seat of a peculiar fibro- and degenerative pneumonia. The capsules are highly vascular, the small vessels having thickened walls from hyaline transformation (Fig. 3, *d*); the centre often liquefies, the contents being discharged through a bronchus, leaving a smooth cavity in the pulmonary tissue. These cavities may contract and form a cicatricial "pock

mark," or they may remain stationary for months. On the other hand, they may ulcerate and extend, so that at the necropsy we would find small smooth-walled cavities, together with larger ones with ragged walls, or sometimes with walls similar to those occurring with a tubercular phthisis.

Throughout lungs affected in this way small miliary bodies, closely resembling miliary tubercle, are abundant, but they are not opaque or transparent. These bodies I have called miliary gummata. These gummata sometimes coalesce, but at first they are round and isolated. A close study of these, in comparison with miliary tubercle, shows that there is a vast difference between the two. The periphery of the gumma somewhat resembles the adenoid tissue of miliary tubercle, but a high power distinctly shows that its periphery is composed of concentrically arranged fibrillated connective tissue in which numerous blood-vessels ramify (Fig. 3, *b*, *c*). The walls of these vessels, owing to a hyaline transformation, are invariably thickened (Fig. 3, *d*). As a rule, no giant-cells are found in the gumma.

In miliary tubercle the adenoid tissue is more delicate and less perfectly fibrillated; it is full of small round cells and often contains giant cells; the capsules are less vascular and the blood-vessels do not present the hyaline transformation.[1]

Taking the definition of Ziegler as the standard for miliary tubercle, *i.e.*, "a non-vascular nodule (*Knötchen*) which does not grow beyond a certain size, and which, having attained a certain stage of development, undergoes cheesy degeneration," miliary gumma tend to become encapsulated, miliary tubercles to soften and diffuse. Such a striking analogy between these two forms of miliary bodies naturally suggests the following queries:

1. Is not tuberculosis superinduced by syphilis?

2. In the late stages of a syphilitic lung, may we not also have miliary tuberculosis?

3. Have not miliary gumma been frequently mistaken for miliary tubercles?

The first two must be answered in the negative on account of the absence of temperature and of the Koch bacillus tuberculosis. There is, however, no good reason why a tuberculosis should not be developed on a syphilitic lesion, but the writer has not found a single instance where the post-mortem has revealed this.

Before answering the next question definitely, more data are required to prevent confounding the two.

These pathological deductions are the result of eight years' work in this direction, and a careful study of several hundred necropsies.

The rational signs in many respects resemble those of a tubercular phthisis. The patients complain of having had a heavy cold with incomplete recovery, followed by a dry, hacking cough, or one with an abundant mucopurulent expectoration. The sputum is either white and frothy, or thick, purulent, and of a greenish or yellow tinge, as in a true pulmonary tuberculosis. The copious expectoration from the very commencement is explained by the peculiar degenerative pneumonic process. Absorption is prevented by the thickening of the vesicular tissue, and all the inflammatory exudation has to be expelled through the trachea. In miliary tuberculosis there is little or no expectoration until the lung-tissue commences to break down and absorption is active. Early hemorrhages are frequent and often copious, while the dyspnœa is an early and pronounced symptom. These are accounted for by the primary diseased condition of the blood-vessels. But in true tuberculosis hemorrhages do not occur until late in the ulcerative process. Pleuritic pains are common, and there is often great weakness while the general physique remains fairly good—in fact, the emaciation is not at all in proportion to the weakness, and is nothing like that of the tubercular variety. The pains are unquestionably due to the extensive pleurisy so common in these cases. The weakness and nervous prostration without emaciation is apparently due to the inability on the part of the blood to obtain the requisite quantity of oxygen to stimulate the nervous system, and the surcharging of the blood with carbon dioxide (Co_2).

The skin is warm and moist, but there is little or no elevation of the bodily temperature. Night-sweats are frequent and distressing, and the patient complains of cephalalgia and of indefinite and wandering pains in the bones and tissues, which increase at night.

These also are explained by the want of oxygen and ruperabundance of CO_2. The absence of fever in syphilitic cases and its universal presence in tuberculosis is a striking and diagnostic point of differentiation. It is also clearly explained by the two lesions. In syphilitic lesions the thickening of the pulmonary substance and the marked tendency to encapsulation prevents the entrance of the effete and inflammatory products of the air-spaces getting into the lymph or vascular channels.

In tuberculosis the reverse is true. From the very onset of a miliary tubercle its inherent tendency is to break down and undergo retrograde changes. Now the effete and inflammatory products are taken up by the lymphatic and vascular channels and a true septic condition is developed with its accompanying rise in bodily heat. This abnormally high temperature is one of the earliest and the most positive symptom of tubercular lesions.

In syphilitic phthisis the stomach remains strong and with but little attention will digest well, nearly up to the last. In tuberculosis the stomach is among the first organs to rebel. Were it not for this fact many cases by forced feeding would terminate in recovery which now inevitably terminate fatally.

Dyspepsia and slight jaundice are not infrequent. The urine has a characteristic pale, limpid appearance, which, together with the sallow complexion, often leads to the suspicion of a renal lesion. The urinary examination is usually negative unless there happens to be a coincident renal lesion.

The dyspeptic symptoms and those of jaundice are usually due to similar vascular changes in the liver, and a functional derangement of that organ, and a deficient production of bile, which also accounts for the frequent constipation.

Married females abort without any apparent exciting cause further than the syphilitic taint. Their children, if born, are often plump, but soon die of marasmus. The first child is often healthy, but the subsequent children are delicate. Frequently patients complain of sore throat and of an early loss of hair.

The physical signs are peculiar and diagnostic; the respiratory act is labored and all the accessory muscles of respiration are brought into play, but there is little or no expansion of the chest. The shrinkage of the chest-wall is not apparent early, and in many instances is slight even with extensive pulmonary destruction. Early in the disease palpation reveals increased fremitus, but in the advanced cases it is diminished, owing to the small volume of air entering the lung.

Percussion gives varying degrees of dulness, which is most marked at the apex but diminishes toward the base. The percussion-note is dull and of "wooden quality," and localized areas of dulness are found. Owing to the fact that the small cavities have thin walls and contain considerable air, the dulness is not so great as would be ex-

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[1] This form of pulmonary lesion has been quite extensively described by:
Greenfield, W. S.: On Visceral Syphilis, London Pathological Transactions, pp. 209, 208. London, 1877.
Goodhard, J. F.: Phthisis of Fibroid Forms; History of Syphilis, op. citat., p. 313.
Green, T. Henry: Syphilitic Disease of the Lung, op. citat., p. 331.
Pye-Smith: Tertiary Syphilis affecting Lung, p. 334.
Mohamed, F. A.: Two Cases of Syphilitic Disease of the Lung (early fibroid), op. citat., p. 339.
Godhart, J. F.: Syphilitic Disease of the Lung. London, 1874.
Frouenier: Gaz. hebd. de méd. et chir., 48, 49, 51. Paris, 1875.
Thompson, E. Reginald: Pulmonary Syphilis, British Medical Journal, August 28, 1880.
This disease has been recognized and described from Morgagni's time to the present. A much more extended bibliography could be appended, but this is sufficient to show that the lesion has been recognized by eminent pathologists.]

pected, but, compared with a sound chest, it is decided.

Auscultation yields most positive and peculiar evidence when the rational history is taken into consideration. The inspiratory and expiratory murmurs are prolonged and harsh, especially the former, with a decided intermission between the two. Broncho-vesicular breathing is frequent at the apex.

The peculiar high-pitched and prolonged inspiratory murmur is explained by the thickened pulmonary substance and increased elastic resilience. This also accounts for the short and high-pitched expiratory murmur.

In this respect, the physical signs are just the reverse of those common to emphysema, where, owing to the loss of pulmonary substance and resilience the expiratory murmur is prolonged and high-pitched with a short and slightly increased inspiratory.

Broncho-vesicular and occasionally true amphoric breathing is heard at the apices, and the necropsy reveals the absence of any cavity. But the hardened walls of a lobule of the lung, the cavity of which communicates with a dilated bronchus, practically acts the same as a small cavity would, and explains the amphoric breathing, voice, and whisper. As a rule, crepitant and subcrepitant râles are absent, thus eliminating chronic bronchitis. It is differentiated from asthma and chronic interstitial pneumonia by the absence of the sibilant and sonorous sounds. The vocal resonance is exaggerated over the consolidated portions. The copious inflammatory exudation keeps the bronchial tubes moist and prevents the sonorous and sibilant sounds being developed. The thickened and expanded condition of the ultimate bronchioles explains the absence of the crepitant and subcrepitant râles. There appears to be no other lesion of the lungs in which the physical signs so accurately register the pathological condition.

Another very strong and pathognomonic sign is a peculiar pain and œdema of the sternum and of the tibial crests. Pressure over these regions produces a very peculiar pain, which is quite intense and accompanied by a recoil not easily forgotten when once recognized. Patients often try to avoid giving evidence of this, but as surely fail as though trying to resist the muscular reaction to the electric current. A noticeable feature is that when the sternum is excessively sensitive the tibial crests are less so, and *vice versa*. There is no other disease in which this localized tenderness and œdema of the periosteum is met with. It is never found accompanying a true miliary tuberculosis, but it is exceedingly common in connection with syphilis, and, from this absence in cases of tuberculosis, where the diagnosis was confirmed by the necropsy, and its almost universal presence in cases of syphilis, it may be regarded as pathognomonic of a specific taint. In addition to this, it is always found to disappear when the patient is under an anti-syphilitic *régime*.

The diagnosis is based upon five principal signs and symptoms:

1. The abundant expectoration without any signs of softening of the pulmonary tissue.
2. The weak and debilitated condition without marked emaciation and the good rational history of phthisis.
3. Pronounced dyspnœa without any evidence of a cardiac or pulmonary obstruction to the circulation.
4. The peculiar pain and the reaction to pressure upon the sternum and tibial crests.
5. The ready response to treatment is another element in the diagnosis.

The prognosis depends upon the early recognition and treatment. Syphilitic phthisis may run a very rapid course, but, as a rule, it is quite chronic. Dissipation hastens its progress, especially when alcoholic stimulants are used to excess.

In treating this affection, the liver should first be freely acted upon by cathartic doses of calomel or podophyllin, which in some cases should be frequently repeated. Experience has shown that the mixed treatment yielded better results than when mercury or iodide of potassium alone was used. The combination most successful is one-sixteenth of a grain of the biniodide of mercury, from five to ten grains of the iodide of ammonium, and ten to twenty grains of the iodide of potassium in a drachm of the compound tincture of gentian, three times a day after meals.

Great reliance is placed on the ammonium salt, not perhaps on account of its intrinsic action in syphilis, but from the action which it has in rendering the two others more soluble, capable of easier absorption and assimilation, and in increasing their solvent action upon these newly formed gummatous elements—in fact, its action may be compared to that of trituration on calomel.

This is, of course, only theoretical, although it was taught by the late Dr. Van Buren, and may not be in keeping with the experience of other observers, but there can be no question of its efficacy in the cases in which it has been tried. Patients have repeatedly come under observation in whom one hundred grains of the saturated solution of the iodide of potassium produced no effect, but who showed rapid improvement after a free catharsis and a maximum dose of thirty grains of the combined salts. It may be argued that recovery under the iodide is no sure proof of the existence of syphilis, as these drugs only prevent a waste of tissue and thus might retard an ordinary phthisis. It is, however, pretty generally acknowledged by writers on therapeutics that the chief potency of the potassium salts and iodide is due to their power of increasing oxidation. Upon this property our theory of their action has been based. Turkish and Russian baths are also of great service. It is quite essential to prescribe expectorants which will render the inflammatory exudation as watery and free from mucus as possible, at the same time stimulating the ciliated epithelium-cells, and thus freeing the air-passages of inflammatory products which tend to decompose, act as irritants, and interfere with the aërating space.

The best of food, air, and a total abstinence from all forms of dissipation must be insisted upon. The inherited cases are the more intractable, and will not yield to the iodide of potassium alone.

These deductions are drawn from a large amount of clinical material.

The conclusions may be summed up as follows:

1. *Etiology.*—Pulmonary lesions attributable to syphilis are very common, more so in females than in males, with the maximum number of cases occurring between thirty and forty years of age; it is as frequently, if not more frequently, inherited than acquired.

2. *Pathology.*—The lesion is most frequent at the apex and usually involves both lungs; it is a peculiar pneumonic process in the early stages, while later cavities are formed, and it becomes phthisical in the sense of progressive consolidation, followed by softening and the formation of cavities. There is a strong resemblance, but a positive difference, between syphilitic and tubercular phthisis, and a positive anatomical difference between a syphilitic and a miliary tubercle.

3. *Symptoms.*—These are peculiar and diagnostic.

4. *Diagnosis.*—This rests mainly upon the rational history and physical signs, the extreme dyspnœa, the periosteal tenderness, and the absence of an increased bodily temperature.

5. *Prognosis.*—This depends upon an early recognition of the trouble.

6. *Treatment.*—It must be anti-syphilitic to be of any avail. Many cases are unaffected by iodide of potassium alone, unless under enormous doses, but a rapid improvement follows upon the use of the biniodide of mercury, iodide of ammonium, and the iodide of potassium.

In conclusion, thanks must be extended to Dr. George R. Elliot for his pains in examining the specimens for the bacilli, to Dr. George G. Van Schaick for the drawings, and to Dr. E. B. Brunn, one of the laboratory stu-

dents, for preparing the specimens and examining for the bacilli.

In addition to the foregoing, I would like to state that, from October 1, 1884, to May 15, 1885, I made forty-two necropsies. In eleven of the cases, or 26.19 per cent., there was, in my opinion, a syphilitic condition of the lung—either gummata or cavities. Each was put to the test for the bacilli of tuberculosis, and in every instance they were found to be absent. The last three of the eleven were also put to the double test for the bacilli of tuberculosis and those of syphilis, and in all of them the latter were found in abundance, but none of the former. One case of the forty-two, or 2.35 per cent., had been diagnosticated as tuberculosis. The sputum was found to contain the bacilli of tuberculosis, and the diagnosis was confirmed by the necropsy. To the above a much larger number of necropsies can be added with a similar result.

102 East Thirty-first Street.

CASE OF WORD-BLINDNESS — CLASSIFICATION OF THE FORMS OF APHASIA.[1]

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On May 1, 1884, I was called to one of my stated patients, a lady of about sixty years of age, whom I found naturally anxious about a peculiar experience which had befallen her. The previous afternoon she had taken a long ride in her carriage to Greenwood Cemetery, to visit the grave of her only son, who died three years before, of phthisis. She said that she had enjoyed the ride, and did not feel particularly fatigued by it, but on returning home began to experience a sensation of unusual weariness. She exerted herself, however, then, before going down to dinner, to write an advertisement to come out in the morning paper, for a servant-girl. She was surprised, however, to find that for some unaccountable reason she could not word the advertisement to suit her, and after tearing up some five or six such written attempts, she was obliged to ask her sister to write the notice for her. Soon afterward, while at the dinner-table, a severe pain set in at the upper portion of the left temple, which continued to increase until it obliged her to retire to her room, and not long afterward, to bed. This pain persisted through the night, but did not prevent her from having a fair amount of sleep. She rose at her customary hour in the morning, and but for the persistence of the same pain, though in less degree than on the evening before, she would not have noticed anything unusual about herself, had it not been for the arrival, soon after breakfast, of an applicant in answer to her advertisement. Upon the girl handing her some written recommendations, the lady found herself unable to make anything out of either one of them, and had to call her sister in, who then read them without difficulty. Soon another girl came in, and my patient experienced just the same difficulty in attempting to read her references. She said that her first thought was that something was wrong with her eyes, but on looking around the room and inspecting a number of small articles minutely she was satisfied that she could see and distinguish objects as well as ever. The moment, however, that she turned to the writing, while she knew that she could see the written characters as well as she could see worsted-work, yet not a single letter conveyed any idea to her mind of its character or meaning. She thereupon took up a newspaper, and at once recognized that something peculiar had happened to her, for she was totally unable to read a word in it. The separate letters could be seen, but an indescribable blur, as she thought, rendered it all indistinguishable, whereupon I was sent for to explain the difficulty.

I was much interested, of course, in the patient's story, for nothing could have been better described or expressed in words. There was neither hesitancy nor thickness in her articulation, nor confusion in diction or thought, but, on the contrary, she detailed her case with a peculiarly good choice of terms. "What is it, doctor, that makes that newspaper so illegible to me? I see that there are words there, but I am wholly unable to tell what they are," were some of her remarks. At first I directed my questions so as to avoid increasing her alarm and excitement, and in time found that she had not experienced another symptom except the above-mentioned pain and her inability to read or write. She felt no numbness or tingling, either in the face or extremities, nor any loss of power, her grasp being the same as usual in each hand, while no difference was perceptible to her between either of the lower extremities in walking. The use of the hands for sewing, buttoning, or tying, and for holding a pencil for writing, seemed as good as ever. There was no difference observable in the vision of the two eyes—no specks, nor mists, nor colored images; no marked difference in hearing on either side, nor any other symptoms referable to the ears; and there was no dizziness whatever. The face showed no distortion, either, when the patient was speaking or laughing. Examination of the radials showed them to be hard and tortuous, and the pulse was of high tension and slightly quickened. I may remark here that a brother of the patient, a few years her senior, had a slight hemiplegic attack, with aphasia, some seven years ago, from which, however, he has quite recovered.

At my first visit I was soon obliged to desist from experimenting with my patient's inability to recognize written or printed words or figures, for the plainer this strange disability became to her by my tests, the more she was inclined to become distressed by it, and to press for an explanation, so that I feared the effects of excitement upon her cerebral circulation. At my visit the next day the pain in the temple still persisted, and was uniformly described as running along a line which corresponded to the temporo-parietal suture. Some days afterward it was noticeable that she occasionally miscalled words, of which, however, she immediately corrected herself. On cautiously testing her again, I found that her word-blindness at the end of the week was complete. The largest letters, like the heading of the New York *Herald*, and figures, were as unrecognized by her, when separately pointed out, as the smallest. With the exception, however, just mentioned, her spoken language was that of a well-educated woman who had learned to express herself fluently and well.

Her recovery from this condition began in about two weeks and progressed gradually until in three months she could both read and write, especially the latter, with tolerable facility. When she began to write again, however, it was in a very small hand, but in time she quite recovered her ordinary handwriting. Since then she has shown little or no change, except a marked increase of restlessness and impatience. She now writes all her own letters, but says that whereas she used to be a good correspondent, the task of answering letters has become very irksome. Reading, however, she finds more difficult than writing, for she can read aloud only slowly; while reading to herself, she says, soon fatigues her.

A history like this goes far to support Charcot's recent classification of aphasia into sensory and motor forms, instead of the former vague and inaccurate terms of amnesic and ataxic aphasia, because it shows a derangement of speech complete in itself and yet limited to the impressions of one special sense alone, viz., that of sight. Words reached the brain through the ear as well as ever, and therefore conversation was so perfect that the patient only accidentally learned that all language on paper was for her impossible. The eye could not "speak" a word to the consciousness. To this sensory defect of

[1] Paper read before the Neurological Section of the New York Academy of Medicine.

speech the term word-blindness has been given. But quite parallel to this case of sight aphasia we may have a person whose brain can see words perfectly but cannot hear words, although it can hear everything else. Examples of word-deafness, indeed, are even more curious than examples of word-blindness. Thus Broadbent relates the case of an intelligent and well-educated patient who became speechless from a syphilitic neurosis, but who evidently could read his newspaper, as he showed by going once to the nurse, in much excitement, to point out the announcement in the paper of the failure of a firm with which he had business relations. When asked to read aloud, he complied readily, but the result was gibberish, which his defect, however, prevented him altogether from perceiving. A sentence which read, "The Odessa line is again working properly," he read, "The assoil lens a puft piff miss corres povety," and so on, reading seriously and steadily, quite unconscious of the absurdity of his utterances. When trying, also, to copy a sentence, as he wrote each letter, he *named* aloud the letters always wrongly, although he *wrote* them correctly. In this case, therefore, the sounds which the brain had been taught to *hear* as words no more reached the consciousness as words than the written forms which the brain had been taught to *see* as words were perceived as such by my patient. That the defect in either case is something very different from amnesia or forgetfulness is proved by the fact that the *mind* has not forgotten a single word, only its equivalent "eye" or "ear" symbol, as the case may be. Why, therefore, the foreign language in which the patient with word-deafness talks to himself is not recognized by him as such is because the eye being still in perfect word use, and hence the meaning of what he reads being as intelligible as ever, he does not suspect that the ear is giving him no word-sound at all, so that he can neither articulate words to others nor himself recognize that the noises which he makes are not words. For it must be remembered that neither sounds nor forms make words; this is done wholly by the consciousness, and it does this out of sensory registrations in themselves specifically unlike. Thus, the sound of the word "man" is as different from the written word "man" as a strain of music differs from a painting. Moreover, it is quite probable that modern progress has enlisted another sensory, and correspondingly distinct registry of words in brain cells related to the sense of touch in the case of the blind who are taught to read with their fingers, and therefore we can conceive of a sightless aphasic who, by the appropriate lesion in his brain, might as suddenly lose his "touch" words as "sight" words are lost in word-blindness and "ear" words in word-deafness.

Such instances establish, at any rate, the fact of purely sensory aphasia, or derangement of speech from damage to groups of sensory cells which have been made to store up each their own kind of impressions, which to the consciousness represent words. Unfortunately, such brain-impressions cannot be made hereditary, like the sounds which animals utter, because it was none of the original business of those cells to have anything to do with speech, and their final perfection of training in word-registration is the sole effect of education, quite as special in its way as that of the gustatory sense in the German wine-tasters who with a mere sip will tell at once the vintage year of more than a dozen samples of hock. However, the recent progress of the pathological anatomy of aphasia, in spite of many difficulties, enables us now to locate pretty definitely the seat of word-blindness to be in lesions of the angular gyrus and its adjacent parts, or the visual centre, while in word-deafness we may look for signs of injury about the acoustic centre in the first and second temporo-sphenoidal convolutions, or in the track of their respective conducting nerve-fibres. It is an interesting observation which goes to prove that nerve-cells are taught word-language only by special effort or training, that facts of disease seem to indicate that articulate speech is a development from gesture speech, for the only explanation why aphasia is so generally associated with paralysis of the right, and not of the left, side of the body, is that the use of the right hand first for expressive gesture led to the employment of the contiguous motor centres in the left brain for the tongue, lower jaw, and face to utter sounds along with the movements of facial expression. That the corresponding centres of the right brain, however, can be taught speech equally well with those of the left brain, is proved by instances of complete loss of speech with paralysis of the left side of the body in left-handed persons, a perfect example of which I had not long ago in a left-handed patient of mine.

But clinical experience shows another and a much more common form of speech derangement whose characters cannot be referred to the sensory or receptive functions of the mind. One of the oftenest-occurring kinds of aphasia is where the patient loses all power to address others, for he can find no words come to his lips if he attempt to talk, or to his hand if he attempt to write, and even if he try to gesticulate he frequently makes the wrong movement with head or hand to what he intended. Yet, though he cannot address others, he still can be addressed, for he can understand all talk *to* him, and can himself read either print or writing, sometimes being even able to recognize the handwriting. In him, therefore, it is plain that the sensory mechanism of speech is intact, for he can both hear words and see words—but he cannot *use* words. The distinctive feature of this form of aphasia, therefore, is inability to work the mechanism of expression. A few words may be left to the patient's tongue, but they are mere sounds, and are often used over and over again without sense, like Broca's patient, who said *tan tan* to every question for twenty-one years.

This loss of power of expression is now properly termed motor aphasia, as it corresponds essentially to the motor or "out-going" element of nerve-function, just as sensory aphasia corresponds to the receptive, or in-coming, element. In distinction, therefore, from the receiving of impressions, as in listening or in reading, all mental acts connected with language which demand the putting forth of effort may be properly classed as belonging to the motor department of speech, for they show that the mind has first received the materials or sensory symbols of ideas, and constructing ideas therefrom, has then sent them forth. All *speaking*, therefore, whether by word of mouth or by handwriting, or by a wink of the eye, is a motor act which has as distinct a motor nervous mechanism as winking itself, which can be done only by a motor nerve acting on the palpebral muscles. It is moreover familiar to everyone that we receive thoughts by ear or by eye much more readily and quickly than we can express them in turn to others, which shows that the two processes are distinct, and not interchangeable. So that out of any five persons receiving equally clearly just the same idea there would be found a great variety of faculty or power for expressing it afterward, while disease shows that one process may be destroyed without the other being affected.

But between these two kinds of aphasia, namely, word-deafness and word-blindness on the one hand, and paralysis of expression on the other, we have a puzzling series of mixed cases with most varying degrees of the symptoms of each of these two kinds. Thus, cases are recorded (Trousseau) in which the patients could not utter a word, but could write as well as ever. Here there was motor aphasia, but limited to only one mechanism of out-going speech, *i.e.*, the mouth, without affecting expression by the hand. It is curious that motor speech is sometimes intact in word-blindness, even when the expression is by writing, for cases are recorded (Broadbent) of patients writing correctly while they could not read anything—not only printed characters, but what they themselves had just written. This fact can be explained

only by admitting that when one learns to write, which is long after he has learned to speak, he teaches the art of writing to new nerve-cells which are different from those which ordinarily register word-forms, and which, therefore, may remain in working order when the visual cells are paralyzed.

In addition to these forms of speech derangement, we have still others, the most important of which is *paraphasia*, in which the patients are constantly using wrong words, and others, again, in which entire classes of words, most commonly nouns, are lost. Some of these cases I think, can be best explained by admitting a third element in speech, which would correspond to the ganglionic centre of a simple nerve-arc. For just as we have derangements of sense registration of words, or sensory aphasia, and derangements of expression by words, or motor aphasia, so we may have derangements of recognition of words by the consciousness, or centric aphasia. Parrot talk, for instance, has but little of the centric element in it. A higher example of the same sort of words without thought is found in our committing to memory a passage just for the sake of its words, although we have its meaning perfectly in our minds. The degree, in fact, of our recognition of the words which we use is so various on different occasions, that we speak of not realizing sometimes what we have been saying. We can therefore conceive of the mental recognition of words depending upon the vividness of the impression with which they have been registered in the nerve-cells or centres nearest related to the consciousness, and which impressions, in turn, may fade in disease until the consciousness cannot perceive them at all, and hence cannot use them. Meanwhile the lower sensory mechanism still retains them, for if you ask these patients to repeat the words after you, or to copy by dictation, they may be able to do so quite readily. Hence, any indistinctness of the impressions on these higher speech-centres would result in the consciousness often mistaking them, and thus producing paraphasia.

Losses of nouns, on the other hand, occur like Bergmann's case, who had to use a paraphrase for every noun, as for scissors, "that with which one cuts," or for window, "that through which one sees." This interesting form of aphasia plainly suggests that language is acquired, so to speak, in successive layers of specific impressions, those classes which on account of the constitution of the mind are registered first remaining the longest, and those which are registered last fading away the soonest. For there is this fundamental difference between verbs and nouns, that verbs are subjective while nouns are objective. Now, subjective words are associated in the consciousness, from the first, with some inner experience, and hence will be much more deeply impressed than those which are rather associated wtth external or objective impressions. Thus, the consciousness that I see, I hear, or I feel, not only long precedes the recognition of what *thing* I see, or hear, or feel, but the event itself is much more deeply impressed as an idea than the object of the event, which often does not till long afterward receive a name, and thus become a noun. Even yet, in English, the sense of touch is but imperfectly supplied with its distinctive nouns, for while we can say, I see a blaze, or I hear thunder, instead of, I see the appearance of a blaze, or I hear the sound of thunder, we cannot say I feel a fire, or I feel an ice, but are obliged to use some paraphrase, just as Bergmann's patient had to paraphrase every objective term. Nouns, or the names of things, therefore, are more external to the consciousness than verbs, which, instead of being the names of things, are the terms which denote events in experience, *i.e.*, either perceptions or actions. Nouns, therefore, in proportion to their objectivity, partake of the nature of pure names, like proper names, which, as everyone knows, are the last words to be learned and the first to go. That words, indeed, are not learned haphazard in human speech, however, they may be by parrots, but rather by classes, in obedience to mental laws (and hence, can be lost by classes), is confirmed by Ogle's observation that grammatical form is always observed by aphasics in the few words that remain to them—substantives are used in the place of substantives, verbs for verbs, numerals for numerals. Thus, a patient of Broca employed *trois* to express any number, but corrected what he said by holding out the proper number of fingers at the same time. A patient of Dr. Broadbent also possessed only one name for a locality, namely, Burlington, where she had lived as a child, and she used this when she wished to name any place whatever. Kussmaul, it is true, speaks of an Agrammatic aphasia in which the parts of speech are confused, but his instances of the kind belong rather to the category of brain lesions which destroy speech by first destroying thought itself, and in which the patients can hardly be termed aphasic, any more than we can so call speechless, though not wordless, idiots.

Cases of partial, and yet specific, aphasia, like that of my patient here detailed, are interesting on account of the light which they throw upon the cerebral mechanism of speech itself. It is doubtful if the labors of generations of metaphysicians could show us how the mind acquires words, or thinks in them, with anything approaching the demonstration that is afforded by some examples of derangements of speech by disease. Thus, it would scarcely have been surmised by any train of *à priori* reasoning that the faculty of speech was divisible into so many distinct elements or factors as the histories of some aphasics prove. One would as little expect an artist suddenly to lose all power of representing a man while he could still paint a horse as well as ever, as to find a person who wakes some morning with all his nouns gone, or else of a scholar who in an hour becomes as illiterate as a savage who has never seen a written or printed word. But the literature of aphasia abounds with cases which read not unlike careful experiments made for the purpose of analyzing the different mental elements of language separately, so as to enable us to reconstruct the whole with that kind of certainty which only experimental tests can afford.

A CONTRIBUTION TO THE STUDY OF DISEASES OF THE UVULA.

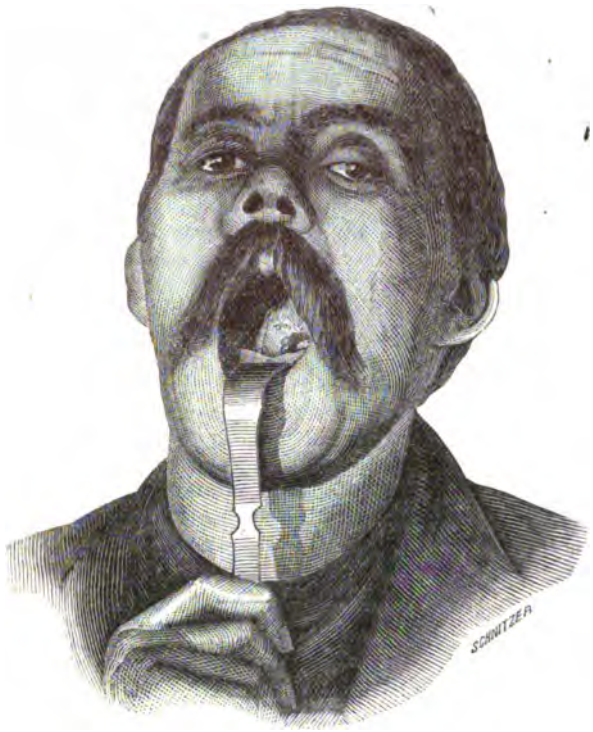
By WENDELL C. PHILLIPS, M.D.,
[NEW YORK.]

PRIMARY disease of the uvula is rarely seen. Most diseased conditions of the organ are either due to extension of disease of the surrounding tissues, or are local manifestations of constitutional disease. For instance, acute inflammation of the uvula, or uvulitis, is usually due to extension of general inflammation of the pharynx. Œdema is never primary. Chronic elongation is the result of chronic pharyngitis. Lupus does not primarily affect the uvula. Papillomas are occasionally seen, but are usually dependent upon syphilis or tuberculosis. Anæsthesia, hyperæsthesia, spasm, and paralysis are always due to external causes. These, in conjunction with certain congenital conditions occasionally seen, complete the list of diseases in which the uvula may be involved. And it may readily be seen how exempt this organ is from the primary manifestation of disease. A case of angioma primarily developing in the uvula has recently come under my notice, and, after patient research, I am led to believe that no similar cases have previously been reported.

John S——, aged thirty-nine, married, plasterer, was sent to the Throat Department of the Manhattan Eye and Ear Hospital by Dr. George F. Carey, July 31, 1885. For two months he had experienced some difficulty in swallowing, and at that time was taking only very soft or liquid food. He had been gradually losing flesh and strength, and his general appearance was haggard and anæmic. He had a chancre two years ago, and one year ago had an operation for urethral stricture.

The uvula was greatly enlarged in every direction, but more especially in length, it being two inches long. The diameter was five-eighths of an inch, terminating in a bulbous mass considerably larger. When in repose this mass hung well down behind the base of the tongue, but caused him very little unpleasantness, except when eating. With slight effort he could force the tumor forward upon the tongue. Numerous small, dark-blue, apparently venous dilatations were visible over the entire surface of the growth. The man was positive that the condition had not existed more than two months. Supposing the disease to be of specific origin, he was given the mixed treatment with tonics.

About this time the tumor was photographed by Dr. George H. Fox. Owing to the great length of the growth and the irritability of the patient's throat it was found impossible to get a good photograph of the entire mass.



The illustration above shows the base of the tumor fairly well and slightly tilted forward upon the tongue. The view given is really from below upward.

During July and August the specific treatment was faithfully followed. His general health improved slightly, but the tumor gradually enlarged. The same conditions also began to appear on the surface of the left velum.

November 6th.—Still increasing.

December 1st.—Specific treatment was abandoned. The tumor was still increasing. During January, February, and March, 1886, he was seen at short intervals, and the growth was treated locally. It was now two and one-half inches in length and interfered greatly with deglutition. It was evident he could not live much longer in this condition, as he was failing rapidly. Consequently an operation was decided upon.

May 4th.—The entire growth was removed with the galvano-cautery. The hemorrhage was very slight. He made a good recovery, and was discharged from the hospital, May 10th.

July 15th.—Returned. He had gained twenty pounds of flesh, and had steadily improved.

October 1st.—He was working steadily at his trade, and gave no evidence of a return of the disease.

The tumor was taken to Dr. T. Mitchell Prudden, who made the microscopical examination. He made the diagnosis of *cavernous angioma* of the *uvula*. The following is his report, viz.:

"*Tumor of the uvula, from Dr. W. C. Phillips.*—The irregularly pear-shaped tumor is roughly nodular on the surface and considerably shrunken by the preservative fluid. The tumor-mass consists for the most part of a congeries of larger and smaller irregular-shaped cavities lined with endothelium and filled with blood. Between these blood-cavities are bands of connective tissue, dense and firm in texture. The muscle-fibres of the uvula are crowded apart by the new-formed blood-cavities, and lie scattered singly and in groups in the connective-tissue bands or partitions. The mucous glands are crowded out of place and moderately hypertrophied. While most of the cavities are filled with simple, clotted blood, some of them are partially, and in a few cases nearly, completely filled with parietal thrombi, which have only central lemma filled with blood. The whole is covered by the normal mucous membrane of the part. The anatomical diagnosis is, accordingly, *cavernous angioma* of the *uvula*. T. Mitchell Prudden."

A CASE OF DEFORMITY OF THE RIGHT HAND, IMPROVED BY PLASTIC OPERATIONS.

By GEORGE WACKERHAGEN, M.D.,
Brooklyn, N. Y.

On February 14, 1884, Carrie M——, aged fifteen years, a resident of Dutchess County, N. Y., working at her occupation of laundress, caught the middle finger of her right hand in the revolving cylinders of a steam mangle. Before the machine could be reversed the whole hand had been drawn between the rollers and exposed for several minutes, not alone to the great pressure and lacerating force of her voluntary resistance, but also to the boiling water and steam.

Surgical aid was at once obtained and such attention given the case as was demanded. In the summer of 1885, about eighteen months subsequent to the accident, she came, by consultation with Dr. Thomas J. Barton under the notice of the writer. The hand being entirely helpless, a series of operations was designed to produce a more useful member.

Fig. 1.

Fig. 1 gives some idea of the relative position of the fingers, but the amount of cicatrix and the firmness with which all parts of the palmar surface were agglutinated cannot be represented. The lacerating forces and scalding had stripped the soft tissues of the palm "to the bone." The healing by granulation and cicatricial contraction, unopposed by a similar force on the dorsum, had flexed the fingers and coalesced the whole front of the hand, including the thumb, in one firm cicatrix. The deformity was further increased by a fracture of the fourth and fifth metacarpals, with forward angular displacement of the fragments, and dislocations at both articulations of the first phalanx of the fifth row.

Under ether anæsthesia V-shaped incisions were made in the scar opposite the index, middle, and ring-fingers, and extension nearly to a right angle made possible. The little finger being so hopelessly disabled, its phalanges were dissected out from the scar, and whatever sound in-

tegument could be obtained from it utilized to improve the condition of its fellows.

Suitable dressings being applied, careful instructions were given concerning the manipulations of which the post-operative treatment should consist in such a case. These directions were but poorly executed, as was learned at the next visit on December 1, 1885, when the condition was essentially unchanged. (It will be noted that the patient and operator lived widely apart.) At this time the patient being again anæsthetized, a second operation was done. The first step consisted in thoroughly removing all scar-tissue. The viciously united metacarpals, with the useless ring-finger, were dissected away without loss of the normal integument of the dorsum, which was drawn around to cover the palmar surface of the first and second metacarpals. The cicatricial tissue was now entirely replaced by normal integument. Instruction concerning passive movement of the two remaining fingers being repeated, the patient was not seen again until March, 1886, when marked improvement was noted. Both active and passive movements were greatly facilitated, and the nutrition of the fingers was much better, the circulation being re-established and maintained to a natural degree.

Most of the disability was now caused by the immobility of the thumb, consequent upon its adhesion to the side of the index-finger. To correct this, a skin-flap was formed from the adjacent portion of the back of the hand and index-finger (Fig. 2), which was brought forward to form a palmar surface and ball of the thumb.

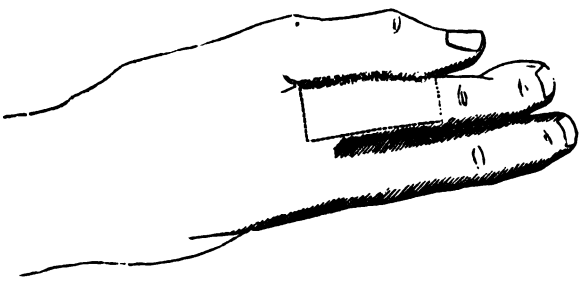


FIG. 2.

The deficiency thus produced was supplied by completely covering the freshly cut surface with small grafts from the arm. Every one of these united.

The hand resulting from this series of dissections and patchings is a very useful member (Fig. 3), and with use

FIG. 3.

is becoming adept at prehension and ordinary manual functions, there being considerable motion and strength in both fingers and the thumb.

A SIMPLE TEST FOR BUTTER.—There is a qualitative test for butter so simple that any housewife can put it into successful practice. A clean piece of white paper is smeared with a little of the suspected butter. The paper is then rolled up and set on fire. If the butter is pure the smell of the burning paper is rather pleasant, but the odor is distinctly tallowy if the butter is made up wholly or in part of animal fat.—*Scientific American.*

Clinical Department.

SOME THOUGHTS ON TYPHOID FEVER AND ITS TREATMENT.

DR. B. F. LUDLUM, of Marion, Ind., writes that his interest was excited by a statement made by Dr. Baruch in an article in THE MEDICAL RECORD concerning the mortality in this disease. The author said: "If we appreciate the enormous mortality of typhoid fever, as gathered from the reports of our city Board of Health, we must acknowledge that this disease is a scourge in New York City." He then gives figures showing an average mortality during the past ten years of 41.28 per cent., and during the autumn of 1886 of 34.68 per cent. Dr. Ludlum continues: "These certainly are alarming figures of fatality, and remind me of the declaration I heard an old man make, soon after I entered civil practice, that 'We think here when the physician pronounces his case typhoid fever the patient had better make his will.'

"I was congratulating the medical profession that in its advances it had almost blown away the wonderful dread of typhoid fever and placed it nearly alongside of rheumatism as regards its mortality. After treating fifty or sixty cases in Warren County, O., without any proving fatal, I was accustomed to tell the patient and friends that we expected our typhoid fever cases to get well, and it always turned out so, until after I had treated one hundred cases.

"On my first day of practice I was introduced to a case of typhoid fever. Having a terrible dread of this disease, I threw all my energy into the study of the case. In all my reading and conversation with other physicians, the burden of the matter was the uncontrollable diarrhœa and the lesion of the bowels. Reasoning from these as facts, I determined to direct all my efforts to allaying the excitability of the stomach and bowels by not only not giving cathartics or emetics but by using every means of restraint that I could command to prevent nausea or diarrhœa. I usually found the Dover's powder or some other opiate and subnitrate of bismuth quite efficient, yet when these did not bring the desired result I took such other medicines as met the indication to allay irritability of stomach and bowels. Ordinarily I gave turpentine in emulsion, so that from twelve to twenty drops of the drug would be taken in twenty-four hours in four to six doses, or, if the turpentine was not agreeable, I gave muriatic acid mixture in about the same dose, combined with five or six drops of the nitric ether. For tympanitic distention of the colon I used embrocations of lard and oil of turpentine over the abdomen, also the hop poultice, steamed over boiling water or vinegar.

"My observation from first to last in regard to this fever has been that the general tendency of the disease is of a depressing nature, and therefore, if any medicine that depresses the system is given, it lessens the vital forces, weakens the nervous system, and is one of the means of opening the excretory ducts of the alimentary canal to flood away the life by irritation and depression, and this at the very time when every atom of strength and nerve-force and every available drop of blood is called for to carry the patient through the weeks of time when there is but little appropriation of aliment to the weak organs to make blood or recruit the failing powers of life.

"I never could find time to give attention to the matter of antipyretics, and had no inclination to until something was advocated that gave better results than I was obtaining by my common method of treating this fever. It was a more ancient idea that fever was the disease, and was the matter in hand to be treated, while there has been a later and not less authoritative doctrine that fever is only a symptom of disease.

One striking example was observed in which the mother gave birth to a child at the seventh or eighth month without any known reason for the premature delivery. Macroscopic examination of the fœtus showed a dropsy of the cord and abdominal ascites. Microscopic examination of the placenta and visceral organs gave positive evidence of a syphilitic lesion, in the shape of marked hyaline thickening of the vessels on the fœtal side of the placenta. The same condition was also well marked in the vessels of the liver, spleen, kidneys, and lungs. There was a well advanced intra-lobular cirrhosis of the liver. The vessels of the placenta and all the fœtal organs gave evidence of being waxy, both upon the application of iodine, and by the methyl-green test.

In this case there was a positive absence of any syphilitic disease in the mother, and she had been perfectly well while carrying the child up to the time of its sudden and unexpected expulsion. Such instances as these, which are frequently observed, are rather strong pathological proof in favor of direct contamination from the father without maternal poisoning.

Clinically, it may be said to originate from the father's side without contamination of the mother by frequently repeated instances such as the following: The husband contracts syphilis, supposes himself cured, marries, and his first child is strong, vigorous, and apparently free from infection. Symptoms of visceral syphilis develop, and each succeeding child shows more and more positive evidence of contamination until the fifth dies of specific marasmus a few weeks after birth. From this time on each conception is followed by an abortion without appreciable cause. During all this time no history of a primary lesion, or secondary, or tertiary symptoms can be discovered in the mother, although repeatedly sought for.

Again, the husband supposes himself cured, but his wife constantly aborts, and without any apparent cause; close examination reveals pulmonary syphilis, or syphilis of some other organ. The husband is brought well under treatment, the wife ceases to abort, and conception is followed by an apparently healthy child, the mother receiving no treatment, as no symptoms are detected in her. The husband ceases treatment, becomes broken in constitution, or dissipated, abortions follow succeeding conceptions.

In these cases treatment of the mother has no effect, but treatment of the husband invariably relieves the symptoms. Such clinical observations point strongly toward the father as the source of the poison without primary infection on the part of the mother.

The large amount of pathological and clinical proof of this nature naturally suggests the probable incurable nature of syphilis and tends to disprove the inertness of the poison in the latent periods and also proves its transmission from father to offspring.

That the surface manifestations can be caused to disappear by treatment is unquestionable, but how many specialists follow their cases through the intermediate period and on to the dead house and then work up the pathological results?

When visceral lesions develop the case naturally falls into the hands of the general practitioner or the pathologist.

To the above methods of contamination can be added all the well-known accidental chances for inoculation, which are by no means few nor far between.

This question of the disease being an acquired or an inherited vice is one of unquestionable importance. A careful study of this point, for a number of years, has led the writer to believe that pulmonary syphilis in adults is a very common disease, and that it is due to either an acquired or inherited taint, the latter being nearly, if not quite, as frequent as the former. The ground for the belief that the disease is frequently inherited is shown by the number of cases in which it appears in young persons under ten or twenty years of age, whose chastity cannot be doubted, and in whom no primary symptoms have ever appeared. In opposition to this view may be urged a primary contagion, passing unnoticed, or a direct transmission by kissing some older infected person; these are outweighed, however, by the absence of primary and secondary symptoms.

Dr. John Ferguson, of Toronto, reported a number of cases [1] where the disease occurred in young children, and where, all other treatment having failed, the symptoms yielded to an anti-syphilitic *régime*, and where the father, at a later period, inquired if his children's condition could have been influenced by his having had syphilis.

All this is proof positive of the transmission of syphilis during its latent period from a father to his offspring without the mother showing any signs of the disease. The latent period of syphilis, which lasts from ten to twenty years, during which there may or may not be exacerbations, succeeds to the active state, and usually occupies that period of life in which the larger number of children are generated, thus probably accounting for the number of cases where positive symptoms are present without any evidence of primary contagion. A positive proof of the occurrence of this disease, in the form of a pneumonia or phthisis, may be found in the fact that these complications yield quickly and favorably to anti-syphilitic treatment. The larger percentage among females, especially among the unmarried and virtuous, seems to favor inheritance. These views are those of a clinician and pathologist, and vary considerably from those advanced by syphilologists. The clinical history of a case of this character is explained by the pathological lesion, and *vice versa*. Whether it be of the acquired or inherited variety may be in doubt, but inheritance from the father's side is in keeping with the biblical prophecy of descent even to the third and fourth generations. The recognition of syphilis in causing and maintaining disease, especially when the pulmonary organs are the point of attack, would indicate that a large number were syphilitic and not tubercular in origin.

The method for determining the characteristic histological lesions of syphilis was as follows. The cases were divided into three distinct classes:

First.—Those in which there was a positive history of a primary syphilitic lesion, and in which positive symptoms of visceral involvement followed.

Second.—Those in which there was a positive absence of primary or inherited infection, and in which no symptoms could be found that would lead to the suspicion of an acquired or inherited syphilitic vice.

Third.—Those in which the history was not absolutely positive in either direction. This third group had to be thrown out, as it would raise the question of other causes for the lesions found.

In the first group all the visceral lesions, whether of the lung, liver, kidneys, brain, or spinal cord, showed a uniform appearance upon microscopic examination, viz., a marked hyaline metamorphosis of the original as well as of the newly formed vessels. Distinct neoplasms were quite common, varying in size from a millet-seed to a small orange. These gummy formations had a sticky feel, with a tendency to liquefy in the centre, and to enlarge and form a distinct and fibrillated vascular capsule. In the capsule the interfibrillated spaces were packed full of corpuscular elements, and were freely supplied with small vessels, the walls of which were thickened and distinctly hyaline. In the soft centre of the gummy neoplasm the bacilli, as described by Lustgarten, were always found.

In the second group this hyaline thickening was never present. There was no tendency on the part of the tubercular neoplasm to form a distinct capsule, and the granulating mass was non-vascular. Having reached a certain size the tendency was to break down and cause

[1] Phila. Med. News, January 17, 1885, p. 66.

further pulmonary destruction. And the bacillus tuberculosis was present.

After studying a large number of cases in this isolated way, and finding a uniform lesion in all, and its absence in all cases when there was no syphilitic taint, the firm conviction has been developed that these pathological changes are positively diagnostic of a syphilitic vice, as the cause of the diseased condition; that by these lesions we can discriminate accurately between syphilitic and tubercular lesions of the lungs. This vascular change has been attributed to other causes, such as alcohol-, tea-, coffee-drinking, etc. Some have even suggested making it a new disease. But when studied in this isolated way, all syphilitic cases showed these lesions, and in no other condition were they to be found, although carefully looked for; this makes them positive evidence of syphilis.

The changes found in the lungs are somewhat similar to those of tubercular phthisis, and caused Niemeyer to remark:[1] "It may be difficult to decide whether the lesion be of a syphilitic origin or not." The lungs may be free, but, as a rule, they are more or less bound to the chest-walls and diaphragm by newly formed connective tissue, so that the pleural space may be completely obliterated. The pleura itself may vary from one-eighth to one-half of an inch ($3\frac{125}{1000}$ to $3\frac{1}{2}$ millimetres) in thickness. The greatest thickening is at the apices. After bisecting the lung the following changes are found: The main lobes, and often the lobules, are separated by distinct bands of newly-formed fibrillated connective tissue, which is not the case in a normal lung. The bronchi, particularly the smaller ones, undergo the same change, while the bronchial glands are indurated and pigmented; the latter, however, is only a coincident lesion. There are numerous cheesy-looking masses which are recognized by a trained eye as gummy formations. Their cut surfaces have a sticky feel and a laminated capsule, which, when they have attained considerable size, is quite distinct. The smaller granules have a similar appearance, and often look as though they could be readily shelled out. These neoplasms may vary, both in size and shape, sometimes occurring as large as a hen's egg, and sometimes so small that they look like the miliary tubercle. They may occur in masses, forming cheesy-looking patches, or they may occur in single round and isolated bodies. These masses are separated by degenerated pneumonia or by an interstitial thickening of the pulmonary substance. The early stage is characterized by a diffuse interstitial thickening of the pulmonary tissue, often associated with a degenerative pneumonia peculiar to this disease. In the latter stages cavities are not infrequent, and these are also found in the apex or high in the superior lobe.

The advanced cases are the ones that are usually found on the necropsy table, while the earlier types are not infrequently associated with intercurrent disease or surgical conditions; but here the histories are very incomplete, often being passed without attracting any attention. A striking illustration of this was found in the diabetic case already published, where, in looking for a tubercular process, a typical pulmonary syphilitic lesion was found. These pathological proofs of the apex—rather than the base and anterior portion of the lung—being the point of invasion are contrary to the ideas of some previous writers, but it has been invariably so in all the cases examined by the writer, both in the post-mortem room and at the clinic. These facts also explain the physical signs which are so marked during life, and substantiate their truthfulness. Macroscopically this lesion is differentiated from the tubercular by the peculiar cheesy and granular gummy formations which have a tendency to encapsulation, and look as though they could be readily shelled out and easily separated from the surrounding pulmonary tissue.

[1] Niemeyer's Text-book of Practical Medicine, vol. ii., p. 771. New York, 1881.

The microscopic appearances are varied and numerous, and the first thing that attracts the attention is the extensive new formation of connective tissue.[1] In many places broad bands are found closely resembling tendon tissue, and intervening between these tense layers there is a universal thickening of the pulmonary tissue, which also involves the vascular walls. The yellow elastic fibres are larger, and consequently appear more abundant. In many of the cases there is little or no pigmentation found which can be traceable to inorganic substance or to blood. The absence of the first, of course, is indicative of the fact that the interstitial thickening is not due to the irritation of carbon, iron, stone, or any of the other inorganic substances, as in the case of some varieties of fibroid induration. The absence of blood pigment, on the other hand, is positive proof that it is not due to chronic congestion or impeded blood-flow. This also dispenses with the idea that the dyspnœa must be due to the stagnation of the blood.

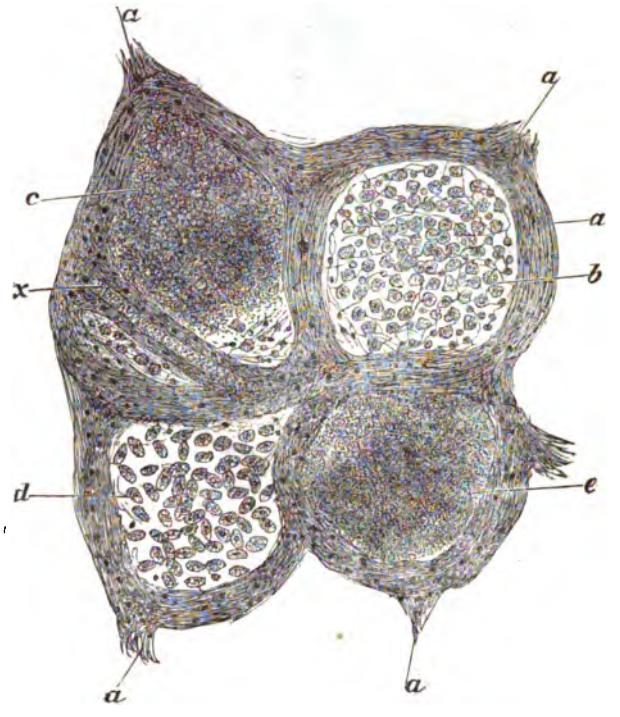


FIG. 1.—Syphilitic Pneumonia. *a*, thickened vesicular wall; *b*, an air-space showing red hepatization; *c*, an air-space showing gray hepatization; *d*, an air-space showing catarrhal desquamation of the epithelial cells; *e*, an air-space showing the degenerative pneumonia of syphilis; *x*, a blood-vessel between two thickened bands of a fibrillated vascular wall.

The thickness of the vascular walls varies from one twelve hundredth of an inch (20.833 μ) to one two hundredth (24.999 μ), but in the majority of the cases they are one eight hundredth to one six hundredth of an inch (31.250 μ to 41.666 μ) (see Fig. 1, *a*). In a number of instances the capillaries were seen in the centre of these thickened bands (Fig. 1, *x*), the walls of which were thickened independently of the vascular tissue. When the vessels were distended with blood, as in Fig. 1, *x*, the thickness of the tissue intervening between the lumen of the blood-capillary and the wall of the air-sac could be measured, and was found to be from one twelve hundredth to one four hundredth of an inch (20.833 to 62.500 μ).

This would naturally impede the free and easy interchange of gases between the two cavities, and would explain why the dyspnœa in this disease was so profound.

In addition, the connective tissue presents four characteristics microscopically:

1. Dense bands of white fibrous tissue with few corpuscular elements.

[1] A portion of this paper and the cuts first appeared in the New York Medical Journal, August 1, 1885, p. 114.

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BREHMER'S VIEWS ON THE CAUSATION OF PHTHISIS.

DR. HERMANN BREHMER, of Gürbersdorf, is the widely-known medical director, as he was also the founder, of one of the largest and most successful "institutes" for the treatment of pulmonary consumption ever established. His experience with patients afflicted with phthisis in its various stages is necessarily a very large one. Accurate observation of persons, as well as their diseases, has always characterized the work of Brehmer. For these reasons the conclusions reached by him are of more than ordinary interest to the practitioner. It is, after all, quite as much the individual as the pathological conditions that may be hidden away in his interior, which concerns us as physicians.

Brehmer does not fully accept the far-reaching generalizations of Koch and his followers. In his latest publication, entitled "Die Oetiologie der Chronischen Lungenschwindsucht vom Standpunkt der Klinischen Erfahrung," the author tells us that he has commonly found the lungs of sufferers from phthisis abnormally large, when compared with the size of the abdominal organs and the heart. In this respect he follows the elder Rokitansky, who long ago described a disproportion in the relative size of the organs named. Now, in individuals subject to the peculiarity mentioned pulmonary circulation is always below par. The parenchyma of their lungs is constantly in a condition of malnutrition. Gaseous interchange is less active than normal.

A *locus minoris resistentiæ* is easily established in the lung-tissue. Hence the predisposition to pulmonary mischief.

Flat-breasted persons' lungs are by no means smaller than normal, on the contrary, they are large and unduly elongated. There is more actual, but less potential, parenchyma in such lungs. It will be found that the heart is comparatively small, with a reduced working capacity. A still further cause of diminished blood-supply for the lungs is often present in the shape of pulmonary arteries of lessened calibre. These three factors, then—namely, large lungs, a small breast, and contracted pulmonary arteries—will co-operate in such a way as to make pulmonary malnutrition an inevitable consequence. Without this anatomical predisposition to phthisis the bacillus tuberculosis is almost powerless for evil.

Individuals with large and vigorous heart, with relatively small lungs, and with normally proportioned abdominal viscera do not acquire phthisis. The disease is, therefore, not contagious in the sense usually given to that word when employed to qualify other maladies.

Whatever, then, leads to impaired nutrition may equally predispose to phthisis. Heredity is naturally of considerable moment in this connection. It is frequently observable that unduly prolonged lactation in a mother will imperiously affect the nutrition of subsequently born children. Brehmer gives examples showing clearly that in large families the later-born children are much more liable to consumption than the earlier ones. Faulty nutrition in infancy may lead to actual structural changes of the heart, lungs, and abdominal organs in the direction pointed out above. The author contends that he is thus able to say with great probability which members of a given family are liable or not to phthisis. But perhaps this is only equivalent to saying, though Brehmer does not say it, that persons having the phthisical *habitus* carry with them constantly a soil favorable to the development of accidentally introduced tubercular bacilli. The author certainly does not dwell on this particular point explicitly enough to convince the Kochites of the fallacy of their reasoning.

Nevertheless, it is extremely interesting to follow the author in his account of some five hundred cases of consumption, showing the rather intimate relationship of phthisis to conditions of mental disturbance, epilepsy, deaf-mutism, and the like. The *ultima causa* of these morbid states is claimed to be always an impairment of nutrition. It must be admitted that Brehmer puts his case very forcibly before us. And though his views do not compel acquiescence, they furnish abundant food for reflection, even if they only show that phthisis is a study not yet exhausted, and that the discovery of the bacillus tuberculosis has not made unnecessary continued efforts to obtain still more knowledge regarding so many-sided a subject.

THE DOCTOR'S HORSE.

A CORRESPONDENT asks us to furnish some general advice regarding the purchase of a horse for the country practitioner.

We are much flattered by the request. It is in a measure an admission that THE MEDICAL RECORD can and does discuss all topics of contemporaneous medical interest in a manner which displays certainty of information, soundness of judgment, and brilliancy of literary gifts.

We confess that the doctor's horse is something that seems at first a little outside of the regular lines of scientific inquiry. It will be at once admitted, however, that this noble animal forms a very important item in actual medical practice. It is not only the doctor's means of transportation, but of recreation, conversation, and speculation. Experience shows that next to an interesting case the doctor will talk about his horse with the greatest actual feeling and copiousness. Such a state of things is natural, since next to his professional education the doctor's horse is the most essential thing for his getting along. What avails the transcendent skill of Dr. A while Mrs. B lies in the throes of a crossed presentation ten

miles away, and no horse? At such times the text-books on obstetrics give place beside the Arab steed which each good physician thinks he possesses. And as the mud-splashed gig lightly skims the earth, with the doctor over the seat, and ergot and ether under it, one knows that the doctor's horse is better than a medical course, for it is a medical courser. But the horse in question is not always a pleasure or a help. Balzac once said that, "It was more necessary for the doctor to have a carriage than to cure his patients," a bit of irony in which there is truth enough to cause much pain. The young man who is just beginning to make some progress thinks that he must buy a horse and carriage, to keep up appearances of continued prosperity, and the new establishment keeps him poorer than ever.

We venture the opinion that Balzac's view is not quite true nowadays, and that this setting up an establishment which one can ill afford is both poor policy and poor morals. It is a great many years since Pascal observed that, "If physicians did not have their cassocks and their mules, they would not have duped the world, which cannot resist this show!" Those who succeed in the present day by virtue of their show are deemed quacks, and their success is of a kind that kills self-respect and can have no attraction for honest minds.

Perhaps our correspondent, who seems to be mainly anxious to know how he can get a three hundred dollar horse for fifty dollars, will be disappointed in getting only a homily like the foregoing. We will give him, however, a few practical hints, or, as such things are now in vogue, some "Don'ts" for the Doctor's Horse. Don't, for example, buy a white horse, for that is the color of Death's; and don't buy a black horse, for that is the color of the devil. If you live among the mountains, don't buy a heavy horse; if you live in the city, don't buy too light a horse. If you are a young man, with bills to pay, don't buy any horse at all.

MEDICAL EDUCATION AMONG THE NEGROES.

We have read with interest an account of the recent commencement of the Meharry Medical College, located at Nashville, Tenn. This institution has been in operation about eleven years, and has graduated some sixty men. It now has a Faculty of ten, two laboratories, and a roll of over fifty students, all from the colored population. The people of that section seem to be taking great interest in the cause of the professional, as well as the general, education of the negro, if we can judge from the names of those who honored the commencement exercises with their presence. All of the prominent State and local officials and representative men of the city were on hand. The addresses delivered by the students themselves would have done credit to any of our Northern students. Certainly these young men have opened before them a wide field of usefulness.

Here in the North the problem of how to educate the negroes has never been beset with any practical difficulty. In our large cities separate schools have sometimes been established under the control of local educational boards. No attempt has been made to establish separate technical schools. The colored man has had free access to any of our academical or professional institutions, and has stood, like all others, solely on his own merits.

In the South, however, where the colored population is so great, the question has been a most serious one. Separate technical schools have been established, and most wisely, too. Those acted with the greatest discretion—we think—who established the Meharry Medical College. The negro has had a past with which we are unfamiliar. That this past must contain a wonderful medical history no one can deny. It follows that no class so well as the negroes themselves can unravel this history, after they are properly trained. Back to the "land of Ham" must we go, as the Meharry salutatorian said, "for the first tracing and earliest cultivation of the healing art."

Furthermore, we may express pleasure that in sending forth the graduates of Meharry College to labor in the great field of medicine their instructors have not coddled them, but put them on their mettle. Said one of the speakers to the departing class: "The future depends not upon the color of your skin, but upon the force of your brain, your capacity for toil, and the comprehension you have of your profession." No better advice could have been given.

THE CURE OF COLD ABSCESSES BY IODOFORM INJECTIONS.

The treatment of cold abscesses has long been a subject of dispute among surgeons, some advising immediate evacuation of the pus with scraping of the walls of the cavity, others counselling non-interference. The expectant plan is the one generally followed and often ably advocated by the more conservative surgeons, especially those who have the greatest experience in the treatment of chronic joint disease, but it is not the one favored by the majority of general surgeons. The former contend that those abscesses do little or no harm if left to themselves; either they open spontaneously, usually without causing any pain or exciting any marked febrile disturbance, or the fluid portion of the pus becomes absorbed and the abscess disappears without giving rise to any constitutional disease whatever. The general surgeon, on the other hand, maintains that the presence of pus is always an evil, and that the chance of constitutional infection is an ever-present danger which more than counterbalances the slight inconvenience or risk of an operation.

Within a few years a new method of treatment of cold abscesses has been largely adopted, which is simple, easy of performance, and apparently devoid of risk to the patient. We refer to the use of iodoform injections. Although this plan has been employed for some time on the Continent, it has not as yet been adopted to any great extent by American surgeons, and is, indeed, we believe, not very generally known among us.

It consists simply in the evacuation of the abscess by means of an aspirator, the largest-sized needle being used, and in the subsequent injection of a solution of iodoform in ether. A four or five per cent. solution is the one more commonly used for abscesses of large or moderate size, but occasionally the strength is increased to ten per cent. when the abscess is of very small dimen-

sions. The quantity of solution to be injected varies according to the circumstances of the case, though, in view of the danger of exciting toxic symptoms, it is generally recommended that not more than a drachm of iodoform should be used. The ether holding the iodoform in solution finds its way into every pocket and sinuosity of the abscess cavity, and there deposits a film of iodoform. Some little attention is necessary after the injection has been made, as the ether is rapidly volatilized by the heat of the body, and may cause an unpleasant degree of distention of the abscess cavity. If this occur it may be necessary to introduce the needle of a hypodermatic syringe in order to give exit to the gas. Ordinarily, however, the patients suffer little inconvenience, and are able to go about as usual after the operation.

The experience of those who have employed this mode of treatment has been that one injection is often sufficient to effect a definite cure of the abscess, provided, of course, that it is not directly connected with a centre of disease in a bone or joint which is constantly secreting pus. Sometimes, however, it is necessary to repeat the operation two or more times. The chief inconvenience of this method is the pain which it causes. This is usually pretty severe, and is sometimes so great that the patients prefer to renounce all treatment than to submit to a second trial of the injections. Attempts have been made to find some less irritating substance as a substitute for the ether, but they have not hitherto been very successful.

It is not in the treatment of cold abscesses alone that the iodoform injections have been employed, but they have been used with benefit also in tubercular bone and joint affections. We referred to this method some years ago, when it was first proposed, and we expressed then the hope that experience would demonstrate its utility. And now, if the reports of a number of competent observers in different countries are to be credited, the measure must be accepted as a valuable addition to the therapeutics of tubercular abscesses and joint disease.

POISONING FROM EATING LIVER.

Dr. Carl Lohmeyer, in a learned article in the *Berliner klinischer Wochenschrift* of January 24th, describes the results of eating the apparently healthy liver of a calf. Very few cases of liver-poisoning have ever been reported, and hence this has some special interest. A certain family obtained the liver and other meat from a calf killed the same day. The liver was salted and put in a cool place; next day it was cooked and eaten at a mid-day meal. The nine persons who partook of it were taken ill very soon afterward. The symptoms were those in the main of cholera nostras. There was also with the profuse diarrhœa a great deal of vertigo, injection of the conjunctiva, and reddening of the face and neck. All the patients recovered in a few days. Investigation showed that the liver was yellower than normal and injected with bile; microscopic examination revealed evidence of an acute hepatitis, just beginning. Tests made by inoculation and feeding failed to give any results upon other animals. There was no evidence of putridity, and other portions of the same animal were eaten with impunity.

The meal which was eaten had been cooked for a long time, and hence any micro-organisms must have been either killed or had their vital energies so reduced as to be innocuous. The result of the study of this case, therefore, led to the conclusion that the symptoms were produced by a septic, chemical virus, which might itself have been the product of micro-organic life.

Cases in which the liver of young animals is diseased in the way discovered by Lohmeyer are very rare, but some instances have been reported.

A NEW THEORY OF MENSTRUATION.

The physiology of menstruation is in a tolerably satisfactory condition, and it seems somewhat a work of supererogation to furnish any new theories about it. The older view of Pflüger, that the mucous membrane of the uterus is thrown off and the surface freshened for the reception of the ovum, has been generally abandoned, and almost all writers are content now with the view that with the approach of the menstrual period a decidua menstrualis is developed for the reception of the ovum, which decidua degenerates and is thrown off if the ovum is not impregnated. Though associated with ovarian activity, this act is, in fact, part of the rhythmical vital processes of the body. As the heart beats, the lungs expand, and all organic muscular fibre moves in a regular cycle, so does the uterus go through its monthly trophic change.

Dr. Arthur Johnstone, of Danville, Ky., has advanced the theory that this monthly process is not so much trophic and vascular as it is secretory and glandular. The endometrium, he claims, is really composed of lymph or adenoid tissue, and menstruation is to it just what the lymph-stream is to the lymph-gland or the blood-current to the spleen.

The explanation for the occurrence of the phenomenon of menstruation in women only, and in some of the higher apes in a partial way, is thus explained: "In two of the ruminants I have shown that nature has supplied this tissue with an abundant lymph-stream, which in the unimpregnated state washes away the ripe material to the general circulation exactly as it does any other lymph corpuscle. But in woman, where, on account of its erect position, the uterus has to depend on the tonicity of its own fibres for the preservation of its shape, no such thing as loose tissue of the lymphatic net-work can be depended on. So to preserve the integrity of the uterine wall, the emulgent stream is poured into the cavity of the body and got rid of by the vagina."

All of which appears to us to be rather vague. Mr. Lawson Tait seems to draw from the views of Dr. Johnstone and of Mr. Bland Sutton evidence favoring the discarded hypothesis of Pflüger, to which we have referred. "We have now," he says, "an explanation of the familiar fact that impregnation and menstruation seem to have a clear relation as to coincidence, the plain fact being that an impregnated ovum adheres only to a surface denuded of epithelium. When desquamative salpingitis has destroyed the tubal epithelium, the ovum may be impregnated in the tube, and may adhere to the exposed surface, and the dreadful issue of tubal pregnancy results."

At least, it is something to learn that tubal pregnancy is caused by desquamative salpingitis. But as for the new theory of menstruation, it can hardly be accepted as yet.

THE TRANSPLANTATION OF A TENDON FROM AN ANIMAL TO MAN.

We have noted in these columns from time to time the attempts, sometimes successful and sometimes not so, made to transplant various tissues, skin, bone, etc., from animals to man to supply corresponding parts lost by disease or removed by the knife of the surgeon. The most striking experiment of this nature is that of supplying a missing eye by one removed from an animal. But possibly the more useful, and certainly the more successful, of these has been the grafting of the less complex tissues, such as bone and skin.

In a recent communication to the Société Médico-pratique, of Paris, Dr. Peyrot relates two instances of the transplantation of tendons. The first case was that of a young man who had received a wound of the middle finger, severing the flexor tendon at the junction of the first and second phalanges. The finger was in a state of forcible extension, and posterior luxation was threatened. This condition had existed for six months, and it was impossible to approximate the ends of the severed tendon by suture. The operator removed from a young dog a piece of one of the flexor tendons of the paw, and, having freshened the ends of the divided tendon in the patient, united them, by three sutures, to each extremity of the transplanted tendon. The wound healed without suppuration, and when the patient left the hospital he was able to execute feeble movements of flexion of all the phalanges of the injured digit.

The second case was that of a young child who had received a similar wound, dividing the flexor tendon of the middle finger at the level of the metacarpo-phalangeal articulation. The ends of the severed tendon were found with difficulty, and were then united to a piece of tendon removed from a dog, as in the first case. The operation was not a success, however, as the foreign tissue sloughed away.

The insertion of a tendon would clearly be required only when there has been an actual loss of tissue, or when the separation has existed for so long a time that reunion by direct suture is impossible. But when such a condition exists, the success obtained by M. Peyrot in his first case would seem to warrant the attempt to supply the defect by the insertion of a tendinous graft from one of the lower animals.

THE SURGICAL TREATMENT OF CERTAIN LIVER DISEASES.

Dr. George Harley has recently published in one of the London journals some observations on hepatic phlebotomy, together with the puncture of the capsule of the liver in certain affections of that organ. He admits that it is no new procedure. It was done in India nearly forty years ago, and has been practised in London for the last two decades. At first a large tube, the size of a No. 12 male catheter, was used. On account of the resulting hemorrhage the size of the tube was gradually reduced, until now an ordinary aspirating-needle is used.

Naturally, many different physicians have tried this procedure, and many of them have recorded their disappointment at their results. Dr. Harley calls attention to the fact that this operation, like all others, has its limitations and essential conditions of success. Disappointment has resulted from a lack of regard concerning the vascular distribution in the liver and the relations of the site of puncture to the interior of the anterior abdominal wall. In Dr. Harley's hands no failure has resulted from an experience of twenty years. He uses an exploring-trocar about seven inches long. This is attached to an ordinary syringe of a drachm capacity, which exerts an aspirating force.

If this exploratory puncture reveals the presence of pus, and it flows with difficulty, the above instrument is replaced by a larger one, which is connected with a rubber ball and siphon arrangement. By this means the drainage of the pus is facilitated, and an excess of aspiration prevented. If the liver-tissue happens to be softened, as the result of pathological change, there is danger of withdrawing through the needle softened liver-tissue, unless great care be taken not to make the suction-force too great. The large vessels should be avoided. The site of puncture should be such that after the withdrawal of the needle the wound in the liver can, by means of firm pressure with an abdominal pad, be brought into close apposition with the anterior abdominal wall. The wound in the skin is simply covered with a small piece of sticking-plaster.

The operation is contra-indicated whenever the liver is affected by cancerous, fatty, or waxy changes. In congestive hepatic hypertrophy the puncture of the capsule of Glisson seems to give some relief.

THE SEPARATION OF THE LICENSING FROM THE EDUCATIONAL FUNCTION, IN MINNESOTA.

Minnesota has for four years had a law regulating medical practice, which law has accomplished a great deal in elevating the status of the physicians of that State and in protecting the public from charlatanry. The law was defective in some points, however, and has now been superseded by another, which seems to contain almost all the desirable features of good medical legislation.

Dr. Perry H. Millard writes us that the main features of this law are: 1. The appointment of a Board of Examiners by the Governor. 2. No member can serve to exceed two terms in succession. 3. Two members are to be homœopaths. 4. All persons hereafter commencing the practice of medicine in the State must pass an examination upon the different branches. 5. Before entering upon said examination they must produce evidence of having attended three courses of lectures, if date of diploma is later than 1887. 6. Power is given the Board to refuse or revoke license for unprofessional, dishonorable, or immoral conduct. 7. No member of any existing medical faculty eligible to appointment upon new Board.

The last section is an especially satisfactory one, since it divorces entirely the licensing from the teaching power.

This is what we are needing in New York State, and the lukewarm support which the present bill at Albany receives is due to the fact that it is felt, after all, to be a medical-college affair.

A NEW BUILDING FOR THE WOMAN'S MEDICAL COLLEGE OF THE NEW YORK INFIRMARY.

A CALL has been issued for a public meeting, to be held at Chickering Hall, Monday, March 14th, in the interests of a new building for the Woman's Medical College of this city. Mr. D. Willis James will preside, and speeches are to be made by Drs. William H. Draper, Emily Blackwell, J. West Roosevelt, Mary Putnam-Jacobi, and Mr. Joseph H. Choate. The call for the meeting has been signed by a large number of well-known public citizens.

Already a considerable sum of money has been subscribed, and it is hoped that a fund of $100,000 will be obtained. The Woman's Medical College of this city has won a deserved reputation for being conscientious and thorough in the education of its students. Its work has been handicapped by the lack of funds and of a suitable building; so that although New York, by virtue of its vast clinical opportunities, should be the centre for the medical education of women, it, in fact, barely holds its own with smaller cities.

FAITH-CURES AGAIN.

REV. DR. J. H. BUCKLEY returns to his attack upon the faith-curers in the March *Century*. He brings further evidence to show that there is nothing supernatural in their work, but that it is entirely similar to the cures made by spiritualists, voudoos, and magnetic healers.

On one point alone we think that Dr. Buckley has failed to lay sufficient evidence, and that is the evil which this sort of thing eventually works. The physician, over and over again, comes across illustrations of failures of the faith-curer, and he observes that the effect upon the patient's mind is bad. The will-power of one who has once been hypnotized is enfeebled, often permanently; and the process of faith-cure is a form of mesmerism. Persons benefited for a brief time through the stimulus of emotional excitement relapse into a worse state than before. It is a kind of emotional intoxication, and the mind suffers from it as from all morbid stimulants. So far from faith-curing and magnetic healing taking away the work of the physician, it actually adds to it; and nothing probably would give a larger field for the work of the neurologist and alienist than a wide-spread indulgence in faith-curing.

THE EMBALMING OF BODIES AND PRESERVATION OF SUBJECTS FOR DISSECTION.

IF we cannot save our patients, we can at least preserve our subjects. This is the text upon which Professor S. Laskowski, of Geneva, writes, in a memoir crowned by the Academy of Sciences of Geneva.[1] His work is an interesting one; and as the main facts contained in it can be easily condensed, we venture to present them to our readers.

Professor Laskowski reviews first the history of embalming. Of ancient nations the Egyptians, as is well known, reached the greatest perfection in its practice. But, after all, their methods were crude and empirical, and their success depended chiefly upon the remarkable dryness of the climate.

The Egyptians simply eviscerated the body, stuffed it with aromatics, and bandaged the body with cloths saturated with gums and aromatic substances. The body was thus preserved long enough for dissection to take place, when putrefaction became impossible.

Embalming was resorted to again in the middle ages, when bodies were again eviscerated, and the limbs and trunk cut into. Balsamic substances were then inserted and the wounds sewed up.

It was not until the present century that embalming and the preservation of subjects was undertaken by means of injections into the vessels. Dr. Franchina, of Naples, and, at almost the same time (about 1835), Lauth, of Strasbourg, conceived the idea of forcing preservative fluids into the blood-vessels. This plan has been followed with various modifications ever since. Franchina first used a five-per-cent. solution of arsenious acid. This preserved the subject, but made it very poisonous, and rendered dissection not free from danger.

Gaunal, of Paris, devised a method which was successfully followed for some time. It consisted in placing the subjects for two months in a solution composed of nitrate of potassium, 1 part; chloride of sodium, 2 parts; alum, 1 part. Later he substituted arterial injections of a saturated solution of neutral sulphate of alum. Subsequently, various solutions containing zinc, sulphite of soda, corrosive sublimate, etc.

None of these, according to Laskowski, were free from objections, and he announces as the ideal injecting-fluid a solution first devised by himself in 1864. This solution consists simply of glycerine of second grade in quality, 100 parts; carbolic acid, 5 parts. Of this from four to six litres are used at a cost of about eight francs. A somewhat cheaper fluid which answers very well is glycerine ambrée, 100 parts; alcohol (or water), 20 parts; carbolic acid, 5 parts; crystallized boric acid, 5 parts. Cadavers injected in this way remain free from decomposition for several months. Even if decomposition has already begun, the injection will stop it, and preserve the body.

Professor Laskowski claims that by modern methods the embalming of the body can be done much more perfectly than was the case in ancient times. Embalming, however, is now, as in ancient times, a luxury which few can afford, and its success calls for a great deal of technical skill. The fluid used consists of 7 litres of pure glycerine, 250 grammes of carbolic acid, 500 grammes of chloride of zinc, 1 kilogramme of absolute alcohol, and 250 grammes of corrosive sublimate. Some special manipulations are required in order to mix these ingredients properly. After it is made, such essences and tinctures are added as may be desired to produce agreeable odor and color.

The vessels are injected with this fluid, the greatest possible care being taken not to rupture any vessels. Flannel bandages saturated in the solution are also bound about the limbs and trunk. Bodies so prepared and exposed to the air in vaults have been preserved for twenty years. In one case a body so embalmed and buried was examined eighteen months later, and very little change was found.

[1] L'Embaumement la Conservation des Sujets et les Preparations Anatomique, par Le Docteur S. Laskowski. Genève—Bale—Lyon: H. Georg, 1886.]

News of the Week.

THE MEDICAL DEPARTMENT OF THE UNIVERSITY OF NEW YORK held its Annual Commencement on March 8th, and graduated a class of 151. The address to the graduates was delivered by Rev. Dr. John R. Paxton.

CHOLECTOMY.—Professor Langenbach has recently reported a successful removal of the gall-bladder, which was diseased and full of gall-stones.

THORACIC LUNG HERNIA.—A strongly built child, eight months old, suffered from whooping-cough, and after one of the paroxysms developed a protrusion in the mammary line between the sixth and seventh ribs. This was found to be an actual hernia of the lung. The case was reported by Dr. Adler to the Berlin Medical Society.

AN INCREASE OF LOCAL TEMPERATURE OVER THE SPLEEN has been found by Dr. Montefusco, of Naples, in variola. This local increase is about 1° C. higher than the cutaneous temperature elsewhere, and varies with the course of the fever.

THE LONG ISLAND COLLEGE HOSPITAL held its Twenty-eighth Annual Commencement on March 2d, and graduated a class of thirty. This excellent institution continues to prosper, despite of the nosological inversion under which it suffers. It is a college—not a hospital—which holds the commencements. Some day we trust the topsy-turviness will be corrected.

TWENTY YEARS IN PRISON FOR BLOWING UP A PHYSICIAN.—The Maine method of dealing with doctors who are out when a patient calls is described by the *Lewiston Journal* as follows: "A physician in Monson went out of town when a certain person's child was sick. The child died; the father thereupon blew up the doctor's office with dynamite, saying that he did it for revenge—claiming that if the doctor 'had staid at home and attended to his business' his child would have lived. The doctor is sufficiently 'blown up' for his sins, but to have his office blown up is carrying things beyond physiological limits. The Maine dynamiter was sent to prison for twenty years."

A PATHOGNOMONIC SYMPTOM OF TUBERCULAR MENINGITIS.—Dr. J. D. Skeer, of Chicago, writes us on the above subject, regarding which an editorial appeared in THE RECORD of some weeks ago. At that time we made the suggestion that syphilis, as well as tuberculosis, might possibly produce some such appearance of the pupil as Dr. Skeer describes. The point at least was worth consideration. We regret that Dr. Skeer misconceived our meaning, and has chosen to think that it implied anything regarding his own family.

DR. W. S. SEARLE, the attending physician of the late Henry Ward Beecher, is a native of New Hartford, Oneida County, N. Y. He graduated in the arts at Hamilton College with high honor in 1855, and in medicine at the University of Pennsylvania in 1859. He is a member of no school especially, but although ranking among the homœopathists does not belong to any of their societies. He is a regular, but liberal in every particular. He is the author of one or two monographs of value.

IT IS A CONSUMPTIVE LOCALITY.—It is hard to please everybody. We ventured to state, a few weeks ago, on the authority of a correspondent from that place, that Tarborough, N. C., was quite free from consumption, and getting to be quite a health-resort. A physician from that town writes that our note "does the physicians of the place great injustice." Tarborough, he says, does have phthisis, and has its share. In reference to this statement, we beg to remove Tarborough from the heights of salutary greatness upon which we placed it, and we withdraw the unjust remark of calling the town healthy. We shall be willing, if this is not sufficient, to concede that Tarborough is rank with miasmatic disorder and that its streets re-echo to the hollow coughs of innumerable home-bred consumptives. We express remorse at having suggested that Tarborough was a place worth living in, and hope that we have now done full justice to it and its able faculty.

TEMPERANCE AND DRUG-STORES IN KANSAS.—Dr. J. M. Evans, of Chillicothe, O., writes: "It is doubtless true that some unscrupulous druggists in Kansas have violated the spirit of their prohibitory laws in the sale of liquors; but every intelligent reader of your excellent journal knows that your quotations from the Oswego City *Free Press* are overdrawn, and that the representation that the drug-stores throughout the State of Kansas are taking the place of the open saloon is not true." Our correspondent concludes with some animadversions upon THE MEDICAL RECORD, which, as they do not bear on the argument, we venture to omit.

DR. JOHN G. WESTMORELAND, of Atlanta, Ga., died on March 3d, in the seventy-second year of his age. Dr. Westmoreland graduated in medicine at Augusta, in 1841. In 1855 he founded the Atlanta Medical College, and continued to hold a prominent place in medical circles of that city until his death.

THE OVERCROWDING OF THE PROFESSION IN THE AUSTRALASIAN COLONIES.—The *Australasian Medical Gazette* says that the number of medical practitioners arriving in the colonies each year is very much in excess of the proportion it should bear to the increase in the population, when a due prospect of success is considered. It says that local schools are turning out an excess of young medical men. Medical overcrowding is evidently an affection characteristic of growing countries.

HEBREW PHYSICIANS IN NEW YORK.—A writer in the *Mail and Express* states that there are nine hundred Hebrew physicians in New York. This would make about one-third of the total number.

SUCCESSFUL TRACHEOTOMIES.—Diphtheria is epidemic in Hamburg, and in the past year tracheotomy was performed 157 times at the General Hospital, with 69 recoveries. This goes ahead of intubation.

A HEART-TONIC IN ADYNAMIC FEVERS.—Cocaine is recommended as a heart-tonic and stimulant in low adynamic fevers. The dose is gr. ½.

PHTHISIS AND RACE.—Dr. William Pepper's study of phthisis in Pennsylvania shows that this disease prevails (in Philadelphia) more among the foreign-born and negroes than among the native whites; but less among the Jews than among the general population.

A CONTROVERSY IN THE SURGEON-GENERAL'S OFFICE AT WASHINGTON.—The daily papers state that Surgeon-General Moore and the Secretary of War are at odds over the question of who controls the office. It is said that the Secretary, without consultation with the Surgeon-General, sent Dr. Huntington to San Diego, Cal., and placed in his stead at the Surgeon-General's office, Dr. Greenleaf, of Chicago, a gentleman personally distasteful to Dr. Moore. The Surgeon-General remonstrated, and has now appealed to the President.

CELEBRITY No. CCCCXCII.—Under the title of "Celebrities at Home, No. CCCCXCII.," the London *World* gives an interesting sketch of Mr. Ernest Hart in one of its recent issues. Mr. Hart was at one time an ophthalmic surgeon, but gave up practice to assume the editorship of the *British Medical Journal*. He is a devotee of Japanese art, and has a large collection of Japanese bric-à-brac. "The secret of his vast capacity for work," we are told, consists "in love of order, his power of organization and his extensive utilization of short-hand." Mr. Hart well deserves the distinction to which he has attained.

LADY DENTISTS.—The committee of the National Dental Hospital of London have resolved to admit registered lady medical students to the practice of the hospital.

A NATIONAL ASSOCIATION of Genito-urinary Specialists has been organized.

THE TEN MOST USEFUL BOOKS.—*Technics* asks its readers what are the ten most useful books, and the ten most useful remedies for the general practitioner. For the former list there may be suggested, the Bible, Shakespeare, Hippocrates, Pickwick Papers, Schopenhauer, the U. S. Dispensatory, standard works on General Medicine, Surgery, Obstetrics, and, finally, a bound series of THE MEDICAL RECORD!

THE INTERNATIONAL MEDICAL CONGRESS.—The item appropriating $50,000 for the Congress was placed in the Sundry Civil Appropriation Bill, and was therefore, we presume, passed. If so, this sum will be a great help in promoting the success of the Congress. Several steamship lines have reduced rates to $80, $90, and $100 for the round trip across the Atlantic.

AFTER-TREATMENT IN IRIDECTOMY AND CATARACT OPERATIONS.—Dr. J. J. Chisolm, of Baltimore, now simply secures the lid of the eye operated upon with isinglass plaster, the other eye being left untouched. The patient is treated simply as if he had a cornea-wound.

"THE NEW QUININE."—The much advertised nostrum "Kaskine" has been analyzed by Dr. F. B. Power and Dr. Bennett F. Davenport, at the request of Dr. Fr. Hoffmann (*Pharmaceutische Rundschau*). It was shown a year ago to be nothing but granular sugar. Now it is found to contain a minute trace of quinine. Each pellet contains about $\frac{1}{1000}$ of a grain.

THE TITLE OF "N.C.S.D."—A man recently appeared before the Rhode Island Legislative Committee to testify as to the benefits of quackery and the need of giving everyone a chance to practise medicine. His name was "Baxter, N.C.S.D.," which letters were found to stand for "Natural Common Sense Doctor." In his opinion diplomas did not amount to a row of pins, as they could be purchased in Philadelphia not long ago for $5 a bushel. He believed the law should provide that everybody who practised medicine should be placed under bonds to do as he agreed, and if a failure to do so occurred, the money should be refunded. If the doctor agrees, or assumes, to effect a cure, and the patient dies, the doctor should pay back all the money he has received, and pay funeral expenses. All of which seems to show that Mr. Baxter was modest in calling his common-sense natural—it is nearer supernatural. But he was not far out of the way in his estimate of the diplomas at present obtainable.

DEATH IN THE BRIDGES.—In 1857 sixty persons were killed on the Great Western Railway, at the Des Jardines canal bridge. In 1867 forty-eight persons were killed by an accident on a bridge on the Lake Shore road. In 1876 seventy-five persons more were killed on the same road, at Ashtabula. In 1878 the Tay bridge accident cost the lives of ninety persons, and recently, at the White River bridge, over sixty (?) persons were killed.

THE AMERICAN VETERINARY COLLEGE held its Twelfth Annual Commencement on the evening of March 4th, when a class of forty-four was graduated.

MEAT AND TUBERCULOSIS.—The New York Academy of Veterinary Science and Comparative Pathology, a society with a rather heavy name for its light membership, held a meeting in this city last week. Some resolutions were presented which are in the line of present work of preventive medicine. They stated that during the past year 37,330 deaths had occurred in New York City, and of this number 16,000 were those of children under five years of age. The Academy believe that many of the deaths were caused by diseased meat and adulterated milk. There were only four milk inspectors and one meat inspector, and the Academy urged the establishment of public abattoirs where cattle could be examined before and after being slaughtered, and also for the establishment of milk depôts for the examination of milk. The number of inspectors should be increased, and every candidate should first be examined by a commission, to consist of one member from the Board of Health, one from the Microscopic Society, and one from this Academy. An amendment was added to compel every veterinary surgeon to report to the Board of Health all contagious diseases of animals that might come under his notice.

WE LEARN THAT DR. D. B. SIMMONS, who recently visited this country, received a genuine ovation upon his return to Yokohama. Dr. Simmons has practised medicine in Japan for over twenty years and has been connected with the organization and development of the important governmental sanitary work in Japan, besides conducting a large hospital, teaching, writing, and practising.

Reports of Societies.

NEW YORK ACADEMY OF MEDICINE.

SECTION IN PRACTICE.

Stated Meeting, February 15, 1887.

WESLEY M. CARPENTER, M.D., CHAIRMAN, *pro tem.*

SYPHILIS IN RELATION TO VISCERAL LESIONS AS A CAUSATIVE AGENT, ESPECIALLY IN PHTHISIS.

DR. WM. H. PORTER read a paper on the above subject (see p. 285).

DR. FRANCIS DELAFIELD was invited to open the discussion, and said that he had listened with interest to the paper, but found some difficulty in discussing it because of the few points on which he should be disposed to agree with its author. The poison of syphilis certainly sets up inflammation in many different parts of the body, and, roughly speaking, the effects could be classed as acute, subacute, and chronic. There was nothing special concerning the acute process to distinguish it from acute inflammation due to other causes. The subacute inflammation was characterized by the production of granulation-tissue, practically, which was short-lived and had a disposition to necrosis and cheesy degeneration, and might arrange itself into gummy tumors. With this production of granulation-tissue there were, regularly joined, changes in the walls of the arteries, and also acute endarteritis with a tendency to obliteration of the vessels. Besides, there was chronic inflammation, the result of syphilis, and the prominent feature of this was the formation of new connective tissue, with the same changes in the blood-vessels.

When it came to the lungs it seemed to him that these conditions could be found there. There might be acute lobar or broncho-pneumonia which, anatomically, did not differ from the pneumonias due to ordinary causes. There was a chronic form of inflammation of the lung in which the chief change consisted in the production of new connective tissue, and it followed either the type of broncho-pneumonia or interstitial pneumonia, involving principally the root of the lung. With either of these, gummy tumors might be present or absent. That was all that he knew about syphilitic lesions of the lungs; and if the illustration presented represented the typical form of pulmonary syphilis which the author of the paper wished to describe, he should suppose it was an exceedingly good one of chronic miliary tuberculosis. While it was seemingly ungrateful and apparently discourteous to discuss in this manner the conclusions which had been formed as the result of long observation and careful study, yet these conclusions were so entirely erroneous, and so likely to do harm instead of good, that at the risk of the apparent discourtesy he must express his own opinion without reserve.

DR. W. H. DRAPER said that he found himself substantially in the position described by Dr. Delafield. He was not at all convinced, from an anatomical stand-point, that many of the cases described by Dr. Porter were not cases of tubercular phthisis. But it was from a clinical stand-point, especially, that he would be inclined to differ with the author of the paper. He thought it was impossible to make any such differentiation, clinically, as had been made between syphilitic and tubercular phthisis; for the reason that the clinical history of tubercular phthisis varies so much, and he was sure that the experience of anyone who had seen much of tubercular phthisis would readily recall cases in which the clinical picture given of syphilitic phthisis could be reproduced. In other words, the febrile history of tubercular phthisis differs very markedly in different cases. So also does the amount of dyspnœa and all the physical signs of tubercular phthisis.

His own clinical experience in phthisis with relation to syphilis was very limited. About ten years ago he was called to see a woman who had contracted a chancre of the lip from her husband. She had marked syphilitic fever and the typical evolution of the syphilitic disease. Within two months from the time of the development of the chancre he discovered signs of pulmonary disease in the right lung, which progressed rapidly and presented the prominent symptoms of tubercular phthisis, of which she died at the end of eighteen months. He believed it to be a case of tubercular phthisis, and was of the opinion that all syphilographers agreed that the phthisis which follows syphilis is tubercular in character. Most syphilographers also mention the fact that syphilis is a determining cause of tubercular phthisis. He had not seen any other case in which the relation was so marked as in that just related.

DR. F. N. OTIS had been much interested in Dr. Porter's elaborate paper, but he was surprised at the outset to learn that Lustgarten's claim in regard to the discovery of the bacillus of syphilis was supported by Dr. Porter's investigations. The observations of MM. Alvarez and Tafel (undertaken at the suggestion of Professor Cornil, of Paris, for the purpose of testing the validity of this alleged discovery) were published in the "Bulletin of the Academy of Medicine of Paris," for August 4, 1885, and were there claimed by Professor Cornil to have proved that the bacillus in question was not peculiar to syphilis. That while it was often found in the secretions of syphilitic lesions, it was also found in the normal smegma and in other secretions of the genital organs of both sexes—not syphilitic, and more recent observations by other investigators have further disproved Lustgarten's claims.

Lostofer and Klebs, who preceded Lustgarten in the alleged discovery of the true pathological principle of syphilis, each claimed to have discovered the peculiar micro-organism in the tertiary lesions of syphilis, which through numerous experiments by inoculation had been previously shown to be free from a contagious element. The rediscovery of this element in Lustgarten's bacillus again raised the question, and the subsequent elimination of this bacillus of Lustgarten left the question resting on the negative results of inoculation previously alluded to. It seemed to Dr. Otis, however, that the statistics of M. Alfred Fournier, in his work on "Syphilis and Marriage" (Paris, 1880), at last had settled this important matter beyond a question, and made it necessary for future discoverers of the specific bacillus of syphilis to confine this micro-organism to the lesions and secretions of the active period of syphilis. Fournier cites 87 consecutive cases, occurring under his own observation, where men who had had syphilis married within an average of five years from the date of the acquirement of the disease, and who never communicated to their wives the least suspicious phenomenon; and, moreover, these 87 produced among them 156 absolutely healthy children. Thirty-six out of this number of men who had been thus proved to be free from any power to transmit syphilis, either by direct contact or by heredity, were subjects of late or tertiary lesions after marriage, some before and some after the birth of children. These lesions comprised almost all the varieties of the sequelæ of syphilis. This enormous mass of evidence, consisting of 87 authentic consecutive examples, involving prolonged observation of 330 individuals by a competent observer like M. Fournier, may, Dr. Otis claimed, be accepted as settling in the negative the question as to whether or not there is a contagium in the tertiary lesions of syphilis.

Another important question was raised by Dr. Porter, one which had long been a subject of controversy in the medical profession, and that is in regard to the manner in which syphilis is transmitted by heredity. Dr. Porter claimed that the product of conception might be infected by the father alone, the mother escaping entirely. This view, Dr. Otis was aware, is upheld by various authorities,

and apparently trustworthy clinical observations have been adduced which would seem to support it; but he believed it to be a fact that could be generally accepted, that as many cases of syphilis could be brought forward in which the disease had run its course through the active stage without being discovered as there were in which the child had been apparently infected by the father, the mother having escaped. He believed it would be found that in all these cases the mother has had syphilis, but in a form so light as to have escaped observation.

In all the recent leading works on syphilis it is distinctly stated that the natural secretions do not contain the contagium of syphilis, and among these natural secretions the *semen* is especially mentioned. If this be the fact, it would be interesting to know how the male has access to either the ovum or the placenta.

He would claim, then, that under all circumstances syphilis must be first communicated to the mother before the child can have the disease.

With regard to the cases which constituted the subject of the paper, Dr. Otis would designate it as syphilis of the lung rather than syphilitic phthisis. The conditions in syphilis of the lung do not differ in many instances from the results of ordinary pulmonary phthisis, because there is not necessarily anything characteristic in the pathological conditions, as there is nothing specific in the macroscopic appearances in either. Virchow has stated that even in a case where syphilitic gumma were present in the other organs, and he considered the lesion in the lungs syphilitic, the pathological appearances were doubtful. The term phthisis usually implies a tuberculous affection, and suggests a treatment quite opposite to that which we should employ in a case of syphilitic disease of the lung in the tertiary stage. The occurrence of any disease of the lung, as well as of any other organ, resisting ordinary measures in a person once the subject of syphilis, should suggest syphilis as a possible cause of the trouble, and the test of treatment, especially if emaciation is not present, should be applied. The concurrence of late syphilitic lesions at other points constitutes one of the most important aids to a correct diagnosis, and warrants the administration of anti-syphilitic measures to the same extent as if no pulmonary disease were present, it occasionally happening that on the bare suspicion of phthisis mercury and the iodides are either withheld or greatly modified.

Dr. R. W. Taylor spoke from a clinical rather than a pathological stand-point. He thought that it was peculiar to all pathologists and anatomists whose arenas were the microscope and the dead-house to paint terrible pictures of the malignancy of syphilis. He was not one of those who depreciated the malignancy of the disease, but at the same time it was undeniable that very many cases ran a benign course under proper treatment, and the converse was true that the disease would run a severe course if no remedies were taken. There were three essentials to a benign course or a cure of syphilis: 1, A good constitution; 2, a docile patient; and 3, a good doctor.

There were, however, some cases similar to that related by Dr. Draper. In 1872 he saw one in which the patient had been committed as one having small-pox. The disease pursued its course uninfluenced by treatment. After the patient had been out about two weeks he had an attack of what seemed to be broncho-pneumonia, and died in the sixth week of his illness.

Other and similar cases, where the patients have undergone treatment, have been observed. But that the disease did occur, scattered throughout the lungs, and had been cured, he thought the following case would prove. In the spring of 1876 he saw a young Hebrew who was laid up with rheumatic pains and roseola. He had had a urethral chancre. He went through the stages of syphilis during the summer, and early in the next winter he caught cold, as he thought. His breath was short, emaciation followed, his appetite waned, and he sought the advice of a physician. There was slight dulness at the right apex, with rough respiration, and a similar condition at the apex of the left lung, though not so marked. Dr. Taylor regarded the lung trouble as one due, in a measure at least, to syphilis. Dr. W. H. Thomson saw the patient and gave the opinion that it might be due to more than one condition; possibly pulmonary, and possibly produced by the former disease. He diagnosticated localized pleurisy, with peri-bronchitis at the apex on the right side, and a less degree of the same conditions at the left apex. The mixed treatment was continued, and in February, one month after the consultation with Dr. Thomson, there was a marked improvement. During the next summer his health was good, and Dr. Thomson again examined the patient and reported that he found no evidence of the morbid process; and six months afterward Dr. Loomis said that he was unable to detect any pulmonary disease.

According to his experience, then, there were two classes of cases: 1, That of which the first case mentioned was an illustration, acute in character; and 2, that where localized deposits exist in the lungs, pursue a chronic course, and under treatment improve or are cured.

With regard to one point he was totally in discord with Dr. Otis, and that was as to the statement that a mother in order to have a syphilitic child must necessarily be syphilitic.

Dr. F. R. Sturgis regarded the term "syphilitic phthisis," as a very unfortunate one, as there was nothing clinically to distinguish it from ordinary tubercular phthisis. He thought that it would have been better to have recognized this fact, to have recognized that there may be gummatous infiltration of the lungs, and to have dropped the terms pneumonia and phthisis entirely. Then we could speak of a diffuse and a circumscribed gummatous infiltration.

There was one point at which he thought that Dr. Porter was defective in his reasoning. Undoubtedly the hyaline changes mentioned were found in these syphilitic lungs, but would Dr. Porter be prepared to say that in every case in which it was found it was due to syphilis? Probably he would not be willing to take that position. Without question there were hyaline changes, apart from syphilis, and attended by breaking down of tissue. If so, the whole fabric upon which the paper had been built fell to the ground. A syphilitic subject may have broncho-pneumonia, or phthisis, etc., the same as other persons, and when this complication does exist it is extremely unfavorable for the patient.

With regard to the question of a bacillus. If all were in accord with Lustgarten, Dr. Porter's case would be a very strong one. But is there a bacillus that produces syphilis? Lustgarten's is questioned. All know how Lostofer's corpuscle came to naught, and how others have been disproved. Lustgarten's remains as the only one entitled to consideration, and by many syphilographers this is not accepted. Because bacilli are present it does not necessarily follow that they are due to syphilis, or that they cause it.

Again, with reference to treatment, this by no means proves that a given lesion is syphilitic or non-syphilitic.

Concerning the syphilitic child without the syphilitic mother, he thought that the great preponderance of evidence was in favor of the view that infection of the child without infection of the mother does not occur. Indeed, the only case that really supported the view that the child can be infected by the father alone was that reported by Dr. Taylor, and even that had some points at which doubt might arise.

Dr. E. B. Bronson directed attention to one symptom on which the reader of the paper had laid special stress; namely, tenderness, pain, and œdema over the sternum and tibia, a symptom to which Dr. Bronson believed an undue amount of importance had been attached. He had yet to see a case in the late stage of syphilis in which it was present.

Dr. H. Biggs said that altogether too much importance had been attached to the presence of Lustgarten's bacillus, as the evidence that it had any bearing on the existence of syphilis was very slight. It had been found in the vesicles of herpes by several observers, was present in the tissues in only very small numbers indeed, and it seemed to be accidental rather than otherwise, and the bacillus was absent in syphilitic pharyngeal and laryngeal affections.

With regard to the absence of tubercle bacilli, he could not help believing that Dr. Porter's observations had been erroneous. It was very rare that tubercle bacilli were absent in cases of tubercular phthisis, and he would not attach very much importance to the microscopical observations, because the staining reaction of the bacillus of Lustgarten and that of the tubercle bacillus were very similar; so much so, that he thought Dr. Porter had mistaken the one for the other.

As to the clinical history, he had had quite a large number of cases under observation at the workhouse on "the Island," which were undoubtedly in syphilitic subjects, and no better results had been obtained by specific treatment than by the treatment commonly adopted in pulmonary tuberculosis.

Dr. Porter, in closing the discussion, said he was well aware that many of the microscopic appearances, which he had described as being rather characteristic of the syphilitic lesion, were similar to those described in connection with the tubercular process. In the tubercular cases, however, he had been unable to find the peculiar hyaline degeneration which he had seen in the syphilitic cases, and had, therefore, come to regard it as rather characteristic of the latter affection, and, finally, that it was absolutely diagnostic of the syphilitic taint.

With reference to the bacillus of Lustgarten, he had not been a very positive believer in its value, but to eliminate any doubt he had had the specimens examined by those who were familiar with the bacillus, and they had reported that those present were not the bacilli of tuberculosis. If tubercular, of course they would exclude syphilis; or they might not necessarily exclude that disease. For a bacillus, stained according to Lustgarten's method, was always found in the centre of the masses called gummatous tumors, and it was this fact that seemed to go toward establishing the belief that, in many cases, the child could become syphilitic through the father without infection of the mother. Again, very many of the cases responded to anti-syphilitic treatment, not having improved under the forms usually employed in the treatment of pulmonary tuberculosis.

The Section then adjourned.

NEW YORK PATHOLOGICAL SOCIETY.

Stated Meeting, January 26, 1887.

T. Mitchell Prudden, M.D., President, in the Chair.

The President announced, as

THE COMMITTEE ON MICROSCOPY

for the ensuing year, Drs. G. C. Freeborn, W. H. Porter, and J. S. Thatcher.

Dr. W. H. Porter presented

A HEART WITH A DOUBLE MITRAL ORIFICE,

probably congenital, but he had been unable to find mention of this peculiar malformation.

There were two other interesting features in the case. The man was admitted into the Chambers Street Hospital, where the diagnosis of uræmia was made, and he was transferred to Bellevue Hospital, where it was recorded that he had considerable serous and blood-stained discharge from both ears, and the diagnosis of

FRACTURE AT THE BASE OF THE SKULL

was made, although there was no paralysis. Death occurred a few hours afterward. The autopsy did not reveal any fracture whatever of the skull.

The other interesting fact was that the man had

A DEEP URETHRAL STRICTURE,

which illustrated one reason for not treating these strictures by internal urethrotomy; that is, the stricture was upon the *floor* of the urethra; the roof of the urethra was normal.

Dr. Porter also presented a microscopic section, made from the cortex of the brain, that showed

A SINGLE MILIARY ANEURISM

very distinctly; the globular swelling involved the whole diameter of the little vessel.

CHRONIC PACHYMENINGITIS—ACUTE LEPTOMENINGITIS.

Dr. L. Emmett Holt presented specimens taken from a female child, twenty months old, with the following history:

The patient was one of a pair of twins, the mother and the other twin having died of tuberculosis. She had always been delicate, and in August, 1886, had a febrile attack, lasting nearly two weeks, with a temperature ranging from 102° to 105° F., for which no explanation could be found. There was a moderate amount of albumen in the urine, but no casts. The fever gradually subsided, not being influenced in its course especially by any of the agents employed. There were no marked cerebral symptoms. Ever since that time the child had remained in a rather dull, listless condition, but not particularly drowsy, and gave no signs of pains in the head or elsewhere. She did not thrive, her weight remained stationary, and her tissues were soft and flabby. She was frequently examined with the idea of the possible development of tuberculosis, but no signs could be found in the lungs to indicate disease of any character. Only two prominent symptoms were present—an irregular febrile movement and an enlarged spleen. The evening temperature generally touched only 100° or 101° F., but every week or two a sudden elevation to 104° F. would occur without assignable cause. This was true of the three months preceding her death. The spleen could easily be felt below the ribs.

Quinine was tried in full doses without benefit; then mercurials, by inunction, and later by the stomach, with the idea of a possible syphilitic element in the case. Improvement seemed to follow this plan for a time, and the enlargement of the spleen sensibly diminished, but these changes for the better were but temporary.

Four days before death very marked cerebral symptoms developed. The temperature rose steadily from 101° to 104°, then to 105½°, and finally, on the day before death, to 108° F.

The respirations became irregular, shallow, and finally typically Cheyne-Stokes; pupils equally contracted; slight rigidity of the muscles of the upper and lower extremities, but no paralysis; abdomen tympanitic; stupor increasing to coma, and then death without convulsions, either local or general, and with no focal symptoms at any time during life.

Autopsy, forty-eight hours after death.—Body small, poorly nourished; fontanelle open, ¾ × 1 inch in size. Head: Pretty strong adhesions between dura and pia over frontal lobes, especially of right side. Inner surface of dura over about one-half its extent, and most abundant near the median line at convexity, covered with jelly-like lymph of a yellowish-green color, fully one-fourth inch thick. Beneath this recent deposit a pretty tough false membrane was present, which again was separated from the dura by a thin clot partially organized, but not completely discolored, and covering an area

about half the size of one's hand. The false membrane could be demonstrated as far as midway between the sagittal suture to the base of the skull. Over the left side of the convexity a very thin false membrane existed, not nearly so extensive, but no clot or recent lymph was present. The superior longitudinal sinus contained a firmly organized thrombus, which was not adherent. The pia over the whole convexity, and over the base to a less degree, was covered with recent lymph and pus, very abundant everywhere, giving the brain a greenish appearance. The brain-substance to the naked eye showed no changes; the ventricles were empty, and no tubercles were seen anywhere. Chest: Lungs and heart normal. Spleen: Weight one and one-eighth ounce; firmer than usual; size about normal. Liver normal. Kidneys showed marked cloudy swelling both to naked eye and to the microscope, but no further changes; weight three ounces. Intestines showed old thickening of the mucous membrane, but no evidence of recent inflammation. No tubercles in any viscus.

The case was of interest chiefly from the clinical history and the indefiniteness of the symptoms until a few days before death.

No symptoms were observed during life which corresponded to the meningeal hemorrhage that was found at the autopsy.

Dr. W. R. Pryor presented the fundus of a uterus, to which was attached

A TUMOR FORMED BY PYO-SALPINX.

It was removed on the 11th inst. by Dr. H. Marion Sims from a woman who had been suffering from the symptoms belonging to pelvic cellulitis. The growth was sessile, and necessitated amputation at the internal os. Patient died of peritonitis, the result of constriction from old bands, two and a half days after the operation.

There were several pus-cavities in the tumor; one was nearly ready to rupture through the peritoneal covering. The largest cavity was, probably, connected with the Fallopian tube, although it had nothing whatever to do with the mucous lining of the tube. It was a cavity filled with pus. Under proper precautions some of the contents of this cavity were withdrawn for experimental study, with reference to bacteria, and were submitted to Dr. Prudden.

The President said that the cleanliness with which the removal of the fluid was done was proven by the fact that not a single putrefactive bacteria showed itself in any of the cultures that were made. He examined the fluid with special reference to the presence of suppurative bacteria, particularly the staphylococcus pyogenus aureus, but none were found.

Here, then, was

AN ABSCESS WITHOUT SUPPURATIVE BACTERIA.

But the abscess as found was an old one, and probably when acute the suppurative bacteria were present and started it, and then died, the suppuration continuing. The suppuration continued because the cavity was lined throughout with granulation tissue that doubtless originated in an acute process. Cases of this kind would seem to be of practical interest and importance surgically, because of the possibility that such a purulent fluid as this might gain access to the peritoneal cavity without the establishment of a septic inflammation, as, judging from the absence of bacteria, there would be no probability of its doing in this case.

Dr. J. W. Roosevelt presented a specimen of

MALIGNANT STRICTURE OF THE ŒSOPHAGUS WITH CONTRACTION OF THE STOMACH,

removed from the body of a woman, forty-nine years of age. The previous history was that of chronic gastritis. She never vomited blood. About six months before death the pain from which she had suffered disappeared entirely. The constant vomiting of food was almost the only symptom. The small-sized stomach-tube could not be introduced. After that she was rather constipated, this peculiar vomiting continued, and she lost flesh; but, on the whole, the patient did very well. Two weeks before death a small sound could not be passed through the stricture, yet the woman drank fluids and retained them, even as much as a quart at a time, but within half an hour or so the water would be regurgitated, practically unchanged. She lived on milk, however, taking solid food occasionally, which would return within two or three hours after it had been swallowed.

At the autopsy the œsophagus for nearly its entire length was found dilated to about the size of a quart champagne bottle. The stricture consisted of a ring of nodules surrounding the cardia, and the stomach was a little less than six inches in length and two inches in diameter. There were no secondary deposits.

TELANGIECTATIC SARCOMA IN THE MESENTERIC GLANDS—INTRACANALICULAR FIBROMA OF THE MAMMÆ—MYOMA OF THE STOMACH—FIBROMA OF THE UTERUS—FOLLICULAR CYST OF THE OVARY—CHRONIC INTERSTITIAL OÖPHORITIS—HEALED FRACTURE OF THE RIBS—PERFORATING ULCER OF CORNEA WITH PROLAPSE OF IRIS.

Dr. Ira J. Van Gieson presented specimens removed from an adult well-nourished dog.

The two lowermost mammary glands on the right side were replaced by dense, mottled, brownish-white masses, two by three centimetres in diameter. The remaining glands on the right side contained similar masses, but smaller. Contents of thorax normal. On the inner surface of the second, third, fourth, fifth, and sixth ribs there were a series of slightly projecting nodules at the junction of the anterior and the middle thirds. The intestines were normal. The mesenteric glands were swollen and soft. In the stomach there were two dense, white, distinct masses in the muscular coat elevating the mucosa. The liver was fatty in spots. The kidneys and the spleen were normal. In the uterus there was a mass of tissue, attached by a narrow pedicular base to the anterior wall, corresponding to the shape of the uterine cavity and nearly filling it. The left ovary was cystic; the right ovary was shrunken and hard. On both sides the eyelids were glued together. There was pus between the lids and the cornea. There was a perforation of the cornea near the centre on both sides. The brain was normal.

Microscopical examination.—In the mesenteric glands there were a large number of blood-vessels, with thin, delicate walls, surrounded by rather closely packed clusters of small spheroidal cells. The cells nearest the walls of the blood-vessels were cuboidal. Sections of the mammary glands showed a growth of new connective tissue in the ducts, and extending into the acini as pediculated masses. The process was developed to a moderate degree only, and many acini, although slightly dilated, were free from such masses. Scattered through the section were collections of pigment of hematogenous origin. The masses in the stomach consisted of rather loosely packed, smooth muscle-fibres. The tissue in the uterus was composed of fibrous connective tissue covered with epithelium. The left ovary was changed to a fibrous shell enclosing a granular mass of detritus. The right ovary was reduced to a dense mass of connective tissue containing blood-vessels. The nodules on the ribs were caused by the non-apposition of the two ends of the ribs, which have been fractured at these points.

The President remarked that the specimens were especially interesting with reference to the existence of intracanalicular fibroma, which was of infrequent occurrence, and when present was very liable to be mistaken for carcinoma. The case was furthermore interesting on account of the large variety of tumors present.

Dr. Porter remarked that dogs were very liable to sarcoma.

The Society then went into executive session.

Correspondence.

OUR LONDON LETTER.

(From our Special Correspondent.)

HOMŒOPATHY IN THEORY AND PRACTICE—THE HUNTERIAN ORATION—MEETING OF THE MEDICAL COUNCIL—THE TEETH AND LOCOMOTOR ATAXY—HYPERPLASTIC SYPHILITIC LARYNGITIS—MALIGNANT GROWTHS OF UPPER JAW—GUY'S HOSPITAL.

LONDON, February 19, 1887.

OPEN war has just been again declared against the homœopaths. The renewal of hostilities is due to a disturbance which has just taken place at the Margaret Street Infirmary for Consumption. This institution is somewhat unique, being more of the nature of a dispensary than of an infirmary, and there is an arrangement whereby the honorary staff visit the patients at their own homes. The fracas has arisen from two of the medical officers practising homœopathically and prescribing homœopathic remedies for the patients. How the other members of the staff should have ascertained the latter fact is somewhat mysterious, unless they either made it their business to spy into the case-books of their colleagues or, perchance, condescended to interview the dispenser in search of information. Neither of these would be in accordance with ordinary professional etiquette, which would lead a physician or surgeon to a public institution to attend to his own patients and not interfere concerning those of his colleagues. The prescribing of homœopathic remedies, however, does not constitute the whole of the offence of the two gentlemen in question. The root and branch of their offending is that they openly call themselves homœopaths, have their names in the "Homœopathic Directory," and that one of them is on the staff of the Homœopathic Hospital. It is difficult to imagine how the latter could ever have got elected on the staff of the Margaret Street Infirmary. Of late years a good deal of tolerance has been exhibited as regards the use of homœopathic remedies. The writings of Ringer and Brunton have, it is said, done much to familiarize the profession with many so-called homœopathic medicines. Of late years, also, many of the disciples of Hahnemann have abandoned the principle of giving infinitesimal doses, but administer as large, or larger, doses as the "allopaths." It is therefore somewhat hard to say where allopathy ends and homœopathy begins, but the tendency has been to restrict the appellation of "homœopath" to those who assume the term and thereby cut themselves off from their brethren as a separate sect. Provided a doctor does not do this, he may, as a rule, prescribe what he likes without exciting odium among the regular practitioners. Unless he openly avows his conversion to their tenets, however, the homœopathists may be down upon him for "stealing their remedies!" They assert that Dr. Ringer, in his "Handbook of Therapeutics," has derived much of his information from homœopathic works, and the same thing is now being said about Dr. Brunton and his recent book. The termination of the Margaret Street episode is slightly amusing. The two homœopathic physicians declining to recede from the position they had taken up, a special general meeting of the governors was called, at which a resolution was moved calling upon them to resign. This was not carried, but an amendment moved by Dr. Dudgeon was successful. The homœopathists therefore remain masters of the field. It is understood that nearly all the remaining members of the staff will resign, and many members of the committee also. The curious spectacle will then be presented of a public medical institution—carried on for years by means of voluntary services rendered by regular practitioners—actually falling into the hands of a few homœopaths to manage according to their own sweet will.

A large audience assembled at the College of Surgeons on Monday to hear Mr. Savory deliver the Hunterian Oration. As was befitting the occasion, the President of the College commenced his oration by eulogizing the memory of Hunter. After referring to the numerous discoveries on which John Hunter's fame rests, Mr. Savory said we must admit that Hunter was neither dexterous as an operating surgeon nor what we should now term a well read man. His greatness was that he was a "philosopher in surgery." His passion for collecting was well known, but he did not collect at hap-hazard merely to fill his shelves. "I believe," said Mr. Savory, "that even the objects found there, which appear most foreign to the subject of his thoughts and work, were not introduced from mere idle fancy, but for the purpose, either at once clearly or dimly seen or at least conceived possible, of throwing light, in some way, upon the great questions of which his mind was full." Mr. Savory claimed for Hunter that he introduced the scientific spirit into surgery, and that from his time downward we could trace his influence upon the scientific study of surgery. To the practice of surgery, principles were what grammar is to language. Men might talk without grammar, and practise surgery with little or no knowledge of its principles; but if unexpected difficulties arose, principles might, hinted the orator, be found useful. As the art of surgery advanced there was a danger of its principles being less studied, and it might be asked whether surgery itself, as a science, might not be in danger from the extension of surgery as an art? Referring to the argument that as surgery advances, and the art grows more extensive, it becomes impracticable for anyone to entertain the whole of it, Mr. Savory referred to the law of the division of labor and the question of specialism. As to the latter, he said he had no word to utter in disparagement of that form of it which consisted in a man first of all studying the principles and practice of surgery as a whole, and then, at length, devoting his attention more especially to the cultivation of some particular department of it. But he denounced that exclusive form of specialism which consisted in the practice of some portion of surgery without adequate attainment in, or continued study of, surgery as a whole. This was a false, as the former was a true, application of the law of the division of labor. Speaking of the rival claims of literature and science, Mr. Savory remarked that each had its place, and it was unfortunate that we should grow indifferent to those branches of knowledge we did not possess, and still worse if, instead of spending our spare time in studying them, we employed it in denouncing or expressing contempt for them.

The General Medical Council met on Tuesday last, their numbers augmented by five, being the number of the members elected by the profession at large. Owing to deaths and resignations, many new faces were seen besides those of the elected members. Being the Jubilee year of the Queen's accession to the throne, the President thought the occasion opportune for giving an address on the progress of medicine during the last fifty years, and his fellow-councillors had no choice but sit and listen to what they probably knew as well as Sir Henry Acland, K.C.B. The inspection of examinations was then discussed and determined on. The workings of the conjoint schemes in England and Ireland were considered at some length.

At this week's meeting of the Pathological Society Dr. Hale White drew attention to the case of a man suffering from locomotor ataxy in whom a tooth had fallen out. Dr. White referred to several similar cases placed on record, in some of which all the teeth had fallen out from the upper jaw. Several speakers corroborated Dr. White's statements. Mr. F. G. Bennett spoke of the falling out of teeth occurring in connection with gout or imperfect nutrition. Mr. Bland Sutton referred to some cases of falling out of the teeth in carnivorous animals suffering from softening of the cord and perforating ulcers. At the same meeting of the society,

Dr. Semon showed (for Dr. Jacob, of Leeds) some photographs of, and microscopical specimens from, a remarkable case of hyperplastic syphilitic laryngitis.

The meeting of the Medical Society, on Monday evening, was wholly occupied in the discussion of two papers on malignant growths of the upper jaw. One, by Dr. Servais, of Antwerp, described two successful cases of removal of the entire upper jaw for cancerous growths involving the two superior maxilla. The other, by Mr. Jessett, gave the history of a case in which Mr. Jessett had removed both upper maxilla for a sarcomatous growth. The operation was successful, and Mr. Jessett brought the patient before the Society to show her present condition five months after the operation.

Some forty-nine thousand pounds have been subscribed toward the fund of one hundred thousand pounds being raised for Guy's Hospital. Another ten thousand pounds has been given conditionally, so there seems now some prospect of the whole sum being collected.

OUR PARIS LETTER.

(From our Special Correspondent.)

THE DEATH OF PROFESSOR BECLARD.

PARIS, February 16, 1887.

I REGRET to report the death of Dr. Béclard, Professor of Physiology and Dean of the Paris Faculty of Medicine, which took place on the 9th inst., after only a few days' illness, at the age of sixty-nine. It is only a little more than a week ago that the learned Professor presided over a banquet offered to Dr. Farabeuf to celebrate his nomination to the Professorship of Anatomy at the Paris Faculty of Medicine. It was on leaving this fête that he was seized with an attack of pneumonia which carried him off so quickly. He was the son of the celebrated Anatomist of that name, whose theories are still respected in the learned world. After having finished his medical studies, he was appointed interne at the Asylum of Charenton where he devoted three years to the study of cerebral diseases. He took his degree in 1842, and three years afterward was promoted to Agrégé of Anatomy and Physiology. In 1851 he began with the works of his father on the elements of general anatomy which, however, had not been completed at his death. He was the author of many important works, all bearing on the subjects of his predilection, viz., anatomy and physiology. A volume entitled: "Notices and Portraits," contains panegyrics of distinguished members deceased, pronounced by him at the annual meetings of the Academy of Medicine in his capacity of Perpetual Secretary. It was thus that he pronounced the eulogies of de Blainville, Delpech, Villermé, Gerdy, Rostan, Velpeau, Trousseau, Louis, Andral, Claude Bernard. As a panegyrist he was scarcely equalled, not only for his erudition but for his impartiality. At the death of Professor Longet in 1871 Dr. Béclard was appointed his successor in the Chair of Physiology but he had already been member of the Academy of Medicine since 1862, when in the same year he was elected Annual Secretary, and his re-election took place every year till 1873, when on the death of Dubois, of Amiens, he was appointed Perpetual Secretary. In 1868 he was designated with Axenfeld, by the Academy of Medicine, to draw out a report on the progress of medicine in France, which was highly appreciated. In 1881, on the resignation, for political reasons, of Professor Vulpian from the Deanship of the Paris Faculty of Medicine, Professor Béclard was nominated his successor. This appointment caused some disaffection among the professors of the Faculty, as it was considered an act of favoritism on the part of Paul Bert, who was then Minister of Public instruction. When, however, these hostile feelings had passed away the most amicable relations existed between them to the day of his death, owing in a measure to his affable and benevolent disposition, although he performed the functions of his office in a most satisfactory manner.

He soon became popular among the professors and students, as he always took a personal interest in the well-being of the latter. He was rather reserved, and avoided as much as possible all public meetings or manifestations, and yet he presented himself as a candidate for the Senate in 1876, but failed. In 1886 he was nominated Commander of the Legion of Honor in recognition of his innumerable services to science and through the latter to humanity. His obsequies took place on Saturday last. The lower part of the great amphitheatre of the Faculty of Medicine was converted into a chapel where the body, which was enclosed in a coffin, was placed on a catafalque which was completely covered with wreaths and flowers. The court-yard and principal entrance were entirely draped with black, which presented a most imposing scene. The funeral service was performed at the Church of Saint Sulpice which, notwithstanding its large size, was so full that many persons had to remain outside. After the service, the procession, composed of more than two thousand persons, continued its course to the cemetery of Père Lachaise, where he was interred in the family vault. The chief mourners were MM. Henry Béclard, his son, and Ferrus, his brother-in-law. The pall was held by MM. Berthelot, Minister of Public Instruction; Liard, Director of Superior Education; Gréard, Vice-Rector of the University of France; Brouardel, Assessor of the Faculty of Medicine; Sappey, President of the Academy of Medicine; Peyron, Director of Public Assistance.

Immediately behind the funeral-car followed the family of the defunct, then came the professors and agrégés of the Faculty of Medicine wearing their official caps and gowns, which were of red, purple, black, yellow, orange, according to the Faculty that they represented, and which had a very picturesque appearance. Next in succession were the delegates of various societies, among whom were some lady-students, twenty-four in number, who bore on their shoulders a magnificent wreath of white camelias, white lilacs, and white hyacinths, which was very much admired. When the procession started from the School of Medicine, the deceased having been a Commander of the Legion of Honor, military honors were paid by a battalion of infantry commanded by a colonel.

At the meeting of the Academy of Medicine yesterday the President announced the death of Professor Béclard and after having read the oration pronounced by him over the tomb of the deceased Academician the proceedings were at once closed as a mark of respect to the memory of the much esteemed Perpetual Secretary of the Academy.

The lamented death of Professor Béclard causes several vacancies, among which are the Deanship of the Paris Faculty of Medicine and the Perpetual Secretary of the Academy of Medicine. For the former Professor Brouardel would seem naturally designated, as he has been Assessor to the Faculty for many years and is known to possess the qualities requisite for such a position. As regards the Perpetual Secretaryship of the Academy of Medicine it will only be declared vacant at the meeting of next week, and according to the rules of the Academy the election cannot be made till a month after.

FATAL TOBOGGANING ACCIDENT.—The horrible and fatal accident which occurred in Rutland recently, by which a young man lost his life, can hardly fail to damp a little the prevailing craze for tobogganing. The terrific speed at which the toboggans go when descending the slide makes the lives of those coasting entirely dependent on the security and perfect condition of the icy trough.

ATROPINE IN PULMONARY HEMORRHAGE is recommended by Dr. R. Hausmann, of Meran, in doses of 0.0002 to 0.0003 gramme subcutaneously.

Army News.

Official List of Changes in the Stations and Duties of Officers serving in the Medical Department, United States Army, from February 27 to March 5, 1887.

GREENLEAF, CHARLES R., Major and Surgeon. Ordered for duty in the office of the Surgeon-General of the Army. S. O. 41, A. G. O., February 18, 1887.

HUNTINGTON, D. L., Major and Surgeon. Will be relieved from duty in the office of the Surgeon-General, to take effect March 1, 1887. S. O. 41, A. G. O., February 18, 1887.

HUNTINGTON, DAVID L., Major and Surgeon. Ordered for duty at San Diego Barracks, Cal., and granted leave of absence for one month, from March 1, 1887. S. O. 45, A. G. O., February 25, 1887.

WHITE, ROBERT H., Captain and Assistant Surgeon. On being relieved by Major Huntington, to proceed to Angel Island, Cal., and report to commanding officer for duty at that post. S. O. 45, A. G. O., February 25, 1887.

GRAY, WILLIAM W., Captain and Assistant Surgeon. Leave of absence for seven days is extended twenty-three days. S. O. 13, Department of Dakota, February 21, 1887.

Medical Items.

RHEUMATISM AND RHEUMATOID AFFECTIONS.—The indefiniteness of our conceptions concerning rheumatism was the theme of an interesting discourse by Professor Immermann at the recent meeting of the German Association of Naturalists and Physicians (*Philadelphia Medical Times*). Immermann regards the morbid process characterized by the classical phenomena of fever, articular inflammation, and peri- or endo-carditis as an infectious disease. A number of other less characteristic affections may be included under the adjective "rheumatic." Among these is acute endocarditis without joint-affections. In these cases a recurrence is sometimes accompanied by a joint-inflammation, showing that the former attack was also rheumatic, although one of the most pathognomonic manifestations was absent. Acute sero-fibrinous pericarditis is also sometimes seen, in which, in spite of the absence of other symptoms, rheumatism may be diagnosticated. The presence of valvular lesions of the left heart in such cases, indicating preceding endocardial inflammation, is an almost certain evidence of the rheumatic nature of the attack. Certain forms of what Immermann terms *masked rheumatism* may also be often recognized. One of the most frequent of these is neuralgia, most frequent in the trifacial and sciatic nerves. They may be accompanied or not by fever. They occur in persons who have previously suffered from classical rheumatic attacks, or are accompanied by endocarditis or followed by joint-inflammation. A peculiar form of masked rheumatism is the spastic. Contraction or stiffness of muscles, especially of those in the area of distribution of the spinal accessory nerve, comes on suddenly, accompanied by fever and pain in the affected muscles. The stiffness of the neck-muscles may simulate an attack of cerebro-spinal meningitis. The absence of an epidemic of the latter disease and the prevalence of rheumatism at the time will help in making a diagnosis. Salicyl compounds and antipyrin are specific in their influence upon true rheumatism, and may be used as diagnostic aids, just as the iodides are sometimes relied upon to make a diagnosis of syphilis. Gonorrhœal and scarlatinal joint-affections, purpura with heart-complications, the so-called *peliosis* or *purpura rheumatica*, the articular affections in individuals suffering from bronchiectasis, rheumatic tetanus, Landry's paralysis, acute anterior poliomyelitis of adults, sporadic acute polyneuritis, and beriberi, may be for the present classed as *rheumatoid* affections, in order to distinguish them from true rheumatism, from which they differ in clinical history as well as in treatment. The painful affections resulting from "taking cold" should be designated, as suggested by Erb, as "refrigeratory," and not as "rheumatic."

SOME EXPERIMENTS WITH TUBERCLE BACILLI.—Dr. de Toma arrives at the following conclusions from a series of experiments made to determine certain points concerning the tubercle bacillus. The first question was how long dried tuberculous sputum can retain its specific virulence. He says that the sputum may remain virulent for nine or ten months if thoroughly dried and kept free from moisture at a temperature of 77° F. When transplanted to blood-serum such sputum will result in fresh virulent cultures of the tubercle bacillus. In a temperature of from 86° to 95° F. the sputum loses some of its specific activity in about two months, and becomes inert when kept for a month in a temperature of 122° F., or for an hour in one of 176° to 212° F. The second question was what are the means of entrance of the tubercular infection into the organism, and especially whether the specific bacillus can be introduced by inhalation. He finds that the artificial inhalation of pulverized tuberculous sputum may, indeed, cause a tubercular infection, but only under certain circumstances, when the system is weakened by fasting or long confinement, or when there is a solution of continuity in the mucous membrane of some portion of the respiratory tract. The last point to determine was the paths by which the bacilli were transported in the body after having once gained admittance. The author says that the bacilli begin to grow and increase in number at the point of inoculation, and are thence carried to other parts in the lymph-current. Very probably, however, the wandering cells, which take up the bacilli and their spores, play a not unimportant rôle in the generalization of tuberculosis. The bacilli are found most plentifully in the young tubercles, and their number decreases directly in proportion to the age of the latter.—*Allgemeine Medicinische Central-Zeitung*, October 2, 1886.

SYPHILITIC INFECTION BY THE RAZOR.—Prof. Fleischer has recently reported a case occurring in his practice where a man had contracted syphilis from an infected razor in one of the best hair-dressing establishments in Kief. The local medical society thereupon decided to call the attention of the sanitary authority to the subject, in the hope that it would make regulations to obviate a repetition of such an occurrence. Another case of the same kind has also been published lately. It was that of a soldier, who had been infected with a primary sore of the chin from being shaved in a public shaving establishment in Tiflis. This case was shown to the Caucasian Medical Society by Dr. Chudnovski.—*The Lancet.*

THE HAIRS OF OUR HEAD NUMBERED.—A German inquirer has, it is stated, taken four heads of hair, of equal weight, and then proceeded to count the individual hairs. One (red) was found to contain 90,000 hairs; another (black), 108,000; a third (brown), had 109,000; and the fourth (blonde), 140,000.

ARE LUPUS AND TUBERCULOSIS IDENTICAL?—The view establishing the identity of lupus and tuberculosis has been accepted by many pathologists. Dr. Schwimmer, of Budapesth, at the recent Berlin Congress, strongly opposed it, mainly for clinical reasons. He said that the affection known as tuberculosis of the skin is a very rare one, while lupus occurs frequently (*The Therapeutic Gazette*). Among 2,400 patients, Schwimmer found 90 cases of lupus, but only 5 cases of pronounced tuberculosis of the skin. The clinical diagnosis in the latter affection is based on the bacterial

proofs. In all of these 5 cases there was a rapid disintegration of the nodes. Besides, it is found that this affection invariably proceeds from the mucous membranes; while lupus appears on the epidermis, away from the mucous membranes, which, as a rule, this affection does not implicate. True, there have been observed cases of lupus on mucous membranes, but their number was very limited, and, besides, it is questionable whether the diagnosis was a correct one. Then, the impression produced by the lupoid affection upon the general system is also to be taken into consideration. Tuberculosis, on the other hand, is a general disease; therefore it is not remarkable that lupoid patients sometimes become also tubercular. Hence we can look upon tuberculosis in a lupoid patient as a matter of mere coincidence. The author detailed two cases in which the clinical history went far in showing that the skin-affection present was lupus, and that the coexisting tuberculosis was an additional acquisition, having no relation with the lupus. Among 90 lupus patients, Schwimmer found sixty-eight per cent. constitutionally untainted; in fifteen per cent. only he found a hereditary element. These facts speak against any etiological relation of the two diseases. Besides, it is at least singular that this relation, if actually existing, should not have been observed sooner. Schwimmer knows 33 cases of lupus, of which 15 have for the last twelve years been under his observation, and of which not a single case showed the slightest symptoms of tuberculosis. As a last support of his view Schwimmer advances the bacterial fact entering into the question. Many observers allege that in lupus but few, and but rarely, tubercle-bacilli are found. It is to be remembered that the tubercle-bacilli have a great resemblance to those found in lepra, both as far as form and chemical reaction go. Schwimmer shares the view of Professor Babes, that the differentiation of the single bacillus is a matter of utmost difficulty. Hence Schwimmer cannot be induced to look upon lupus as an affection either identical with or predisposing to tuberculosis. In the discussion which followed, Doutrelepont, Lassar, Lewinski, and Lewin, all opposed Schwimmer. Kaposi, of Vienna, alone upheld the latter's view. His remarks were introduced by what appeared an especial hit against the bacteriological school. "If the gentlemen," said the Viennese authority, "have microscopical evidences of the identity of lupus and tuberculosis, we cannot help that. But, above all, the clinical features of an affection must be considered; for we are practitioners, and not biologists. Otherwise we will be led toward false diagnoses."

Peroxide of Hydrogen in Pertussis.—Dr. B. W. Richardson uses the following formula, and thinks there is nothing quite so good as it in whooping-cough:

℞. Hydrogen peroxide (ten per cent.).. ℥ vi.
Glycerini..... ℥ ss.
Aq. destillat.....ad ℥ iij.
Sig.— ℥ ss. at a dose.

The Discoverer of Saccharin.—Professor Ira Remsen, of the Johns Hopkins Laboratory, writes to the *New York Times* to say that saccharin was discovered by himself, or rather by Fahlberg while working under his directions and with him. Professor Remsen says: "In all his statements regarding the substance in question he (Fahlberg) strives to make the impression that the discovery is his, and in most references to it in print he is given sole credit. I think it is time that I protest in the interest of truth and justice. Fahlberg carried out my directions and deserves credit for this, and for this alone. He did not make the discovery and would never have made it if he had been left to his own resources. The sulphinide saccharin belongs to an entirely new class of compounds which are now under investigation in this laboratory. Some of the other members of the class are sweet, while some are intensely bitter. One is sweet, and bitter-sweet when applied to the tip of the tongue, and bitter when applied to the base of the tongue. These substances have nothing in common with sugar, except the sweet taste. Finally, other sweet substances beside the sulphinides have been made from coal-tar and have long been known, but the world has not been excited over them, and there is, in my opinion, no occasion for getting excited over this latest example of the kind."

Effect of Iron on the Composition of Milk.—Dr. Mendes de Léon has made a number of researches and observations on the supposed effect of taking iron on the composition of the milk secreted. He finds that milk always contains a minute quantity of iron, which differs in different species of animals, cow's milk, for example, being richer in iron than human milk. He gave various preparations of iron to a healthy multipara and analysed the milk, but was unable to detect any increase in the iron it contained, so that it would appear that iron given to the mother does not act on the child by passing into its system, but that it may act by improving the general condition of the mother, and thus causing her to secrete better milk.

The Diet of Centenarians.—A writer on this topic holds in a contemporary that "the rules of life laid down by Cornaro are probably perfect," and he intimates that, in his opinion, "twelve ounces of solid food and sixteen ounces of liquid appear to be the maximum requirements of age." The solids ought, he thinks, to be made up of one-third animal food, chiefly flesh, and two-thirds vegetable nourishment. He dislikes fruit and fish, and says that salt and sugar should only be used sparingly. He also deprecates the too copious use of milk as well as of drugs, and after adding that industry of some kind should be practised, he gravely points out the valuable medicinal properties of port wine. The latter is certainly more suited to advanced life than is almost any other form of stimulant.

Ethereal Oxygen.—Dr. Richardson writes in *The Æsclepiad:* "Ethereal oxygen is a compound I have recently invented for inhalation. I place in a Wolff's bottle, with an inhaling mouthpiece attached to one neck, two ounces or more of ozonic ether, the ethereal solution of peroxide of hydrogen. To this I add, gradually, solution of permanganate of potassa—eight grains to one ounce of water—by the other neck of the bottle, and then cork that neck. As the fluids commingle, oxygen gas and ether vapor are given off freely, and can be inhaled from the mouthpiece. The compound of gas and vapor, anæsthetic, antispasmodic, and respirating, is applicable to a large class of cases of disease, such as pertussis, asthma, and phthisis. I doubt if I ever added anything more useful to practical therapeutics than ethereal oxygen."

M. Greville and the First Use of Chloroform.—"I went yesterday (1848)," says Mr. Greville, in his recently published journal of "The Reign of Queen Victoria," vol. iii., p. 110, "to St. George's Hospital, to see the chloroform tried. A boy, aged two years and a half, was cut for a stone. He was put to sleep in a minute, the stone was so large and the bladder so contracted, the operator could not get hold of it, and the operation lasted above twenty minutes. . . . A curious example was shown of, what is called, the *etiquette* of the profession. The operator could not extract the stone, so at last handed the instrument to Keate, who got hold of the stone; thereupon the first surgeon begged to have the forceps back that he might draw it out, and it was transferred to him; but, in taking it he let go the stone, and the whole thing had to be done over again. It was accomplished, but not, of course, without increasing the local inflammation and endangering the life of the child. I asked Keate why, when he had got hold of the stone he did not draw it out. He said the other man's 'dignity' would have been hurt if he had not been allowed to complete what he had begun."

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Original Articles.

REPORT OF ONE HUNDRED AND TWENTY-FIVE LAPAROTOMIES, WITH OBSERVATIONS ON THE USE OF HOT WATER WITHIN THE PERITONEAL CAVITY DURING AND AFTER LAPAROTOMY TO PREVENT SHOCK — TREATMENT OF SEPTIC PERITONITIS AND INTESTINAL OBSTRUCTION BY THE USE OF PURGATIVES, ETC.[1]

BY W. GILL WYLIE, M.D.,

NEW YORK.

ABDOMINAL surgery has made rapid progress in the past ten years, and it has excited much interest. It has for some time past been the popular topic at society meetings, and much space in medical journals has been given up to articles on abdominal surgery.

To those not particularly interested in special surgery this has become rather tiresome, and many conservative advocates have arisen and entertained us with lengthy polemical articles based upon their opinions rather than on actual experience. Some of these articles are written in a most melancholy and dolefully prophetic strain, and I have no doubt but that they make sweet harmony on the sympathetic chords in the most conservative of conservatives and the most unfortunate of unsuccessful operators; but in medicine, as in all other things, human progress and success meets with opposition.

All must admit that progress and success come from enthusiastic and persistent devotion to one subject. When success forces the subject to become the topic of the day, the fashion, it is pretty certain to be carried too far, and mistakes and excesses will be committed by the rash and incompetent; but this is only human nature, and should not result in condemning what is good, as well as what is bad in the work. After all, success is the crucial test.

At the risk of being tiresome and more or less personal, I will give a short summary of my work in abdominal surgery, and touch briefly on one or two practical points.

Previous to November, 1882, except as an assistant to the late Dr. J. Marion Sims, I had done very little work in abdominal surgery, having operated only seven times—six ovariotomies and one Batty's operation for removal of the ovaries for local pain in a bedridden patient. I lost one of the ovariotomies and the Batty from septicæmia; the others recovered.

November 19, 1882, I did my first laparotomy in Bellevue Hospital. Since then I have kept a record of all cases. I have never, in a single instance, refused to operate where I thought there was a chance of saving or even prolonging life. On the contrary, I have undertaken several cases that were hopeless, and now, with my increased experience, would probably not try an operation in similar cases.

Of the 125 laparotomies done since November 18, 1882: In 1882, 2 cases; in 1883, 7 cases; in 1884, 14 cases; in 1885, 47 cases; and in 1886, 55 cases—or 125 cases in all. Of these, 12 died; but 3 of these 12 were suprapubic hysterectomies, and 1 a very bad case of general suppurative peritonitis. Excluding the hysterectomies and general peritonitis, I have 116 with 8 deaths, or a death-rate a little less than seven per cent. The 125 cases can be classified as follows:

Seventy-four removals of uterine appendages, 5 deaths. Nearly fifty per cent. of these were genuine cases of pyosalpinx, many of them complicated by pelvic abscesses. All five of the deaths were complicated cases. In the last 37 cases only 1 died.

Twenty-six ovariotomies, 3 deaths. The three were complicated cases—one gangrenous, one suppurating, and the third had been tapped eleven times, and died of exhaustion on the fourth day.

Seven suprapubic hysterectomies, 3 deaths. One that died was a cancer case; another was a fibrocystic myoma that weighed fifty pounds; in the third two large myomata had to be enucleated from the broad ligaments. All three died of shock.

Eighteen miscellaneous laparotomies, 1 death. One nephorectomy (suppurating), 1 perityphlitis, 8 ventral herniæ, 2 intestinal obstruction, 1 extra-uterine pregnancy, 2 permanent drainage of tubercular peritonitis, 1 exploratory for cancer, omentum, etc.; 1 for gall-stones, 1 for general acute suppurative peritonitis.

So far I have never yet lost a simple case. All of those that died were complicated cases; nor have I had any accidents from hemorrhage. Although five of the twelve deaths were from shock, none died on the table. Almost exactly one-half of these cases were done in Bellevue Hospital, some of them in the general ward; and of 64, 7 died—2 of these were hysterectomies, 1 acute general peritonitis; excluding these, there were 4 deaths in 61 hospital cases, or about seven per cent.

Much of my success was due to the excellent assistance that I have had from the different house-physicians in Bellevue, and to my three regular assistants that I have had for the past two years—Dr. Crandall, Dr. R. A. Simpson, and Dr. R. H. Wylie.

An examination of the tabulated cases shows a steady improvement.

In 1883,	5	cases of removal of appendages	with	1	death.
" 1884,	10	"	"	"	"	1 "
" 1885,	23	"	"	"	"	2 deaths.
" 1886,	36	"	"	"	"	1 death.

with no deaths in the last 27 cases.

Thirty-six cases in one year may seem large, but most of these were sent to me by other doctors for operation. Unless the case is easily made out as one in which an operation is the only way of effecting a cure, I do not undertake the operation without giving the patient the benefit of the doubt, by keeping her under observation and local treatment for a sufficient time to give a fair test of other methods of treatment.

Repeated attacks of local peritonitis, or a constant burning pain over the appendage, which is at times rendered rather worse than better by any form of local treatment, is perhaps the most reliable indication that removal is the only way of giving relief.

This report does not include cases operated on this year (1887).

The first fourteen cases of Table I. were fully reported in my paper on "Disease of the Fallopian Tubes," in THE MEDICAL RECORD, January 24 and February 7, 1885.

[1] Read before the Medical Society of the State of New York, February 2, 1887.

TABLE I.

No. of case.	Date of operation.	Age.	Married or single.	Number of children.	Number of abortions.	Number of tappings.	Diagnosis.	Operation.	Drainage.	Results.	Remarks.
1. Hospital	May 26, 1883.	32	M.	2	2	..	Pyosalpinx.	.....	..	Recovered.	
2. Hospital	June 25, 1883.	25	M.	..	..	..	Pyosalpinx.	.....	..	Recovered.	
3. Hospital	October 28, 1883.	27	M.	2	..	..	Catarrhal s.	.....	..	Recovered.	
4. Hospital	December 8, 1883.	31	M.	2	..	..	Pyosalpinx.	.....	..	Died.	
5. Private	December 3, 1883.	23	S.	..	..	..	Catarrhal s.	.....	..	Recovered.	
6. Hospital	November 17, 1883.	29	M.	1	..	..	Hydrosalpinx.	.....	..	Recovered.	
7. Hospital	March 3, 1884.	28	M.	..	..	..	Hydrosalpinx.	.....	..	Recovered.	
8. Private	March 13, 1884.	27	M.	..	1	..	Catarrhal s.	.....	..	Recovered.	
9. Hospital	March 20, 1884.	27	M.	..	..	..	Pyosalpinx.	.....	..	Died.	
10. Private	May 1, 1884.	25	M.	..	..	..	Pyosalpinx.	.....	..	Recovered.	
11. Hospital	October 9, 1884.	30	M.	1	3	..	Pyosalpinx.	.....	..	Recovered.	
12. Private	October 20, 1884.	28	S.	..	..	..	Catarrhal s.	.....	..	Recovered.	
13. Hospital	November 29, 1884.	26	M.	1	..	..	Pyosalpinx.	.....	..	Recovered.	
14. Hospital	December 8, 1884.	31	M.	3	2	..	Pyosalpinx.	.....	..	Recovered.	
15. Hospital	January 19, 1885.	28	M.	7	4	..	Catarrhal s. and degenerated ovaries.	.....	..	Recovered.	
16. Hospital	February 2, 1885.	35	S.	..	..	..	Catarrhal s. and cystic ovaries.	.....	..	Recovered.	
17. Hospital	February 28, 1885.	29	W.	3	3	..	Pyosalpinx.	.....	..	Recovered.	
18. Hospital	April 2, 1885.	50	S.	..	..	..	Catarrhal s. and atrophied ovaries.	.....	..	Recovered.	
19. Hospital	April 6, 1885.	27	M.	2	..	..	Catarrhal s. and cystic ovaries.	.....	..	Recovered.	
20. Hospital	May 1, 1885.	23	S.	..	..	..	Pyosalpinx ovaritis; abscess.	.....	..	Died.	
21. Private	May 9, 1885.	40	M.	..	..	..	Hypertrophied tube; fibro-cystic ovary.	.....	..	Recovered.	
22. Private	May 17, 1885.	25	S.	..	..	..	Catarrhal s.; fimbriæ adherent.	.....	..	Recovered.	
23. Hospital	May 29, 1885.	21	S.	..	..	..	Catarrhal s.; left ovary cystic.	.....	..	Recovered.	
24. Hospital	June 4. 1885.	29	M.	..	4	..	Catarrhal s.; fimbriæ adherent; small ovarian cyst.	.....	..	Recovered.	
25. Hospital	June 17, 1885.	26	M.	1	1	..	Catarrhal s. and occluded tubes.	.....	..	.....	
26. Private	July 2, 1885.	38	M.	1	..	..	Submucous fibroid.	Uterine appendages removed.	No.	Recovered.	Three weeks after operation the fibroid sloughed, and was removed per vaginam with forceps.
27. Private	October 5, 1885.	27	S.	..	..	..	Prolapsed and adherent left ovary.	Only left ovary removed.	No.	Recovered.	Constant pain, practically bedridden; under constant treatment for six years.
28. Hospital	October 11, 1885.	32	M.	3	1	..	Pyosalpinx ovaritis.	Removal of appendages complete.	Yes.	Recovered.	Adhesions; tubes occluded and enlarged.
29. Hospital	October 19, 1885.	41	W.	1	..	..	Pyosalpinx ovaritis.	Removal of appendages complete.	Yes.	Recovered.	Adhesions; tubes occluded and enlarged.
30. Hospital	October 28, 1885.	21	S.	..	..	..	Cystic degeneration ovaritis.	Complete removal of appendages.	No.	Recovered.	Local pain; inability to work; frequent epileptiform convulsions.
31. Private	November 4, 1885.	43	W.	2	..	..	Had been treated for extra-uterine fœtation.	Complete removal of appendages.	Yes.	Recovered.	Right tube contained three pints of fluid; left, obliterated; no signs of fœtus.
32. Hospital	November 7, 1885.	17	S.	..	..	..	Cystic degeneration of ovaries.	Removal of appendages complete.	No.	Recovered.	Well-marked hystero-epilepsy.
33. Hospital	November 12, 1885.	22	M.	1	1	..	Pyosalpinx; ovaritis; pelvic abscess.	Removal of appendages complete and sac of abscess.	Yes.	Recovered.	Abscess size of orange.
34. Private	November 16, 1885.	23	M.	..	..	..	Cystic degeneration; ovary as large as a lemon.	Removal of appendages complete.	Yes.	Died.	Ovarian hæmatocele as large as an orange; hystero-epilepsy of seven years; mind affected; died a raving maniac on fourth day after operation.
35. Private	November 28, 1885.	27	M.	1	..	..	Pyosalpinx.	Removal of appendages complete.	Yes.	Recovered.	Tubes indurated, occluded, and adherent.
36. Hospital	December 10, 1885.	32	M.	..	1	..	Ovaritis.	Removal of appendages complete.	No.	Recovered.	Left ovary enlarged and adherent; tubes adherent, not occluded.
37. Private	December 23, 1885.	26	S.	..	1	..	Fibroid degeneration of ovaries.	Removal of appendages complete.	No.	Recovered.	Ovaries double their normal size; adhesions; intense local pain; fear of insanity.
38. Private	January 28, 1886.	39	M.	3	..	..	Pyosalpinx; ovaritis; pelvic abscess.	Removal of appendages complete.	Yes.	Recovered.	Pus, nine ounces—three in the right and six in the left; extensive adhesions.
39. Hospital	April 3, 1886.	22	M.	1	..	..	Pyosalpinx; ovaritis.	Removal of appendages complete.	Yes.	Recovered.	Large, adherent, and occluded tubes.
40. Private	April 7, 1886.	27	M.	..	1	..	Pyosalpinx; ovaritis.	Removal of appendages complete.	Yes.	Recovered.	Ovaries as large as lemon; tubes adherent and occluded.
41. Private	April 10, 1886.	28	S.	..	1	..	Cystic degeneration of ovaries.	Removal of appendages complete.	No.	Recovered.	Tubes normal; ovaries enlarged; local pain well marked; hystero-epilepsy.
42. Hospital	April 19, 1886.	32	S.	..	..	..	Uterine fibroids.	Appendages removed.	No.	Recovered.	There were several fibroids which were very painful.
43. Private	April 21, 1886.	27	M.	..	1	..	Pyosalpinx; ovaritis.	Removal of appendages complete.	Yes.	Recovered.	Ovaries size of orange; tubes, large as wrist, adherent and occluded.
44. Private	May 3, 1886.	30	S.	..	..	..	Prolapsed and adherent left ovary.	Only left ovary removed.	No.	Recovered.	Intense pain over left ovary; bedridden.
45. Hospital	May 5, 1886.	22	S.	..	..	..	Atrophy of left ovary; right, normal.	Only left ovary removed.	No.	Recovered.	Left ovary the size of a bean; severe and constant local pain; bedridden.
46. Hospital	May 10, 1886.	28	M.	..	..	..	Pyosalpinx; ovaritis.	Removal of appendages complete.	Yes.	Recovered.	Tubes adherent and occluded.

TABLE I.—*Continued.*

No. of case.	Date of operation.	Age.	Married or single.	Number of children.	Number of abortions.	Number of tappings.	Diagnosis.	Operation.	Drainage.	Results.	Remarks.
47. Private.....	May 12, 1886.	33	M.	..	..	..	Pyosalpinx; ovaritis.	Removal of appendages complete.	Yes.	Died.	Quart of bloody fluid in two sacs; dense adhesion; marked indications of intestinal obstruction.
48. Hospital.....	May 20, 1886.	30	S.	1	..	..	Prolapsed, slightly adherent ovaries.	Laparotomy; appendages loosened and returned.	No.	Recovered.	Tubes and ovaries apparently normal; were returned.
49. Hospital.....	May 20, 1886.	33	M.	..	1	..	Pyosalpinx; ovaritis.	Removal of appendages complete.	Yes.	Recovered.	Tubes size of thumb, adherent and occluded.
50. Hospital.....	May 26, 1886.	45	S.	..	..	..	Pyosalpinx; ovaritis.	Removal of appendages complete.	Yes.	Recovered.	Tubes as large as thumb, adherent and occluded.
51. Private.....	May 27, 1886.	34	M.	..	..	..	Hydrosalpinx.	Removal of appendages complete.	Yes.	Recovered.	One tube size of orange; both adherent and occluded.
52. Private.....	May 29, 1886.	33	S.	..	..	..	Typical cystic degeneration of ovaries.	Complete removal of appendages.	No.	Recovered.	Ovaries were bags of small cysts; constant local pain; confirmed invalid; fifteen years under treatment.
53. Hospital.....	June 3, 1886.	45	M.	9	3	..	Prolapsed, adherent ovaries.	Complete removal of appendages.	No.	Recovered.	Constant, intense pain; unable to walk or work.
54. Hospital.....	June 3, 1886.	23	M.	..	1	..	Pyosalpinx; ovaritis; pelvic abscess.	Removal of appendages complete.	Yes.	Recovered.	Tubes adherent and occluded; left ovary centre of a pelvic abscess.
55. Private.....	June 3, 1886.	33	S.	..	..	..	Prolapsed, adherent ovaries.	Complete removal of appendages.	No.	Recovered.	Local pain, confirmed invalid for eight years; six years in bed.
56. Private.....	June 12, 1886.	21	S.	..	..	..	Cystic degeneration; ovaries prolapsed and enlarged.	Removal of appendages complete.	No.	Recovered.	Local pain; bedridden for three years; hystero-epilepsy.
57. Private.....	June 19, 1886.	32	M.	..	5	..	Pyosalpinx; degenerated ovaries.	Removal of appendages complete.	Yes.	Recovered.	Cysts held a quart of dirty fluid; tubes occluded and distended.
58. Private.....	October 4, 1886.	21	S.	..	..	..	Hystero-epilepsy; prolapse of ovaries.	Removal of tubes, ovaries, and pampiniform plexus.	No.	Recovered; no temperature.	Four months after operation had no menstruation nor convulsion.
59. Hospital.....	October 4, 1886.	30	M.	1	..	..	Salpingitis; ovaritis; pelvic abscess; pyosalpinx.	Removal of appendages and sac of abscess.	Yes.	Recovered; highest temperature 100°.	History of severe local peritonitis; abscess of several ounces, involving tube and ovary.
60. Private.....	October 13, 1886.	23	S.	..	..	..	Cystic ovaries; intense local pain; bedridden; invalid for years.	Removal of tubes, ovaries, and pampiniform plexus.	No.	Recovered; no temperature.	Three months after operation much improved; up and about; no pain.
61. Hospital.....	October 16, 1886.	25	M.	2	5	..	Salpingitis; ovaritis; pyosalpinx.	Removal of appendages.	Yes.	Recovered; highest temperature 99⅘°.	History of local peritonitis; tubes indurated and size of thumb.
62. Hospital.....	October 21, 1886.	32	M.	1	..	..	Enlarged and prolapsed ovaries, size of a lemon.	Removal of appendages; small ovarian tumor.	No.	Recovered; highest temperature 101°.	Three years an invalid; severe pelvic pain.
63. Private.....	November 4, 1886.	30	M.	1	..	..	Pelvic abscess and pelvic tumor, part of ovary.	Removal of abscess sac and cystic ovary.	Yes.	Recovery complete; no temperature.	Abscess due to suppuration about pedicle of a former operation; part of ovary was left in first operation, three months ago.
64. Hospital.....	November 15, 1886.	27	W.	..	..	..	Disease of tubes and ovaries; hydrosalpinx.	Removal of appendages.	No.	Recovered; highest temperature 99⅘°.	Both tubes distended, size of wrists, with clear fluid.
65. Hospital	November 15, 1886.	31	S.	..	..	1	Pyosalpinx; pelvic abscess, double.	Removal of appendages and sack of pelvic abscess.	Yes.	Recovered; highest temperature 103⅘°. eighth day.	One abscess, involving left tube and ovary, held six ounces pus; right side three ounces.
66. Private.....	November 18, 1886.	31	S.	..	..	..	Ovarian neuralgia.	Removal of right ovary and tube; left tube had been previously removed.	No.	Recovered; no temperature.	Six months ago left ovary was removed for neuralgia, causing complete invalidism; pain came on in right two months later; fibroids in uterus and in the ovaries found on last operation; patient completely recovered.
67. Private.....	November 21, 1886.	33	M.	..	..	..	Fibroma of uterus; intense local pain.	Removal of tubes, ovaries, and pampiniform plexus.	No.	Recovered; no temperature.	Had been under constant treatment eight years; wore pessary most of the time.
68. Private.....	November 27, 1886.	25	M.	..	..	..	Salpingitis and ovaritis; pyosalpinx.	Removal of both tubes and ovaries.	Yes.	Recovered; highest temperature 101°.	Two attacks of peritonitis, last due to stem pessary; complete invalid.
69. Hospital.....	November 29, 1886.	26	M.	..	..	..	Pyosalpinx.	Removal of appendages.	Yes.	Recovered; highest temperature 99¾°.	Extensive adhesions to intestines, etc.; enlarged and hardened tubes.
70. Private.....	December 6, 1886.	31	S.	..	..	..	Prolapse of both ovaries; intense pain for years.	Removal of tubes, ovaries, and pampiniform plexus.	No.	Recovered; no temperature.	Small fibromatas on uterus and ovaries; the latter large and very hard.
71. Private.....	December 8, 1886.	22	S.	..	.	1	Pelvic abscess and fibroid tumor.	Abdominal incision.	Yes.	Recovered; highest temperature 100°.	Two more ounces of pus evacuated; three weeks later, large abscess was drained by vagina.
72. Private.....	December 11, 1886.	..	M.	..	..	..	Salpingitis; ovaritis; pyosalpinx.	Removal of both tubes and ovaries.	Yes.	Recovered; highest temperature 100⅘°.	Several attacks of peritonitis; bedridden for five years; history of gonorrhœa.
73. Hospital.....	December 13, 1886.	35	W.	..	..	..	Pyosalpinx; fibroids.	Removal of appendages and a small fibroid.	Yes.	Recovered.	Tubes enlarged, filled with pus, very adherent; small fibroid had to be removed to secure pedicle.
74. Private.....	December 18, 1886.	50	S.	..	..	..	Fibroma of uterus; intense pain; bedridden; menorrhagia.	Removal of tubes, ovaries, and pampiniform plexus.	No.	Recovered; no temperature.	Invalid for many years, unable to go about; intense pain, treated for peritonitis.

TABLE II.—*Ovariotomies.*

No. of case.	Date of operation.	Age.	Married or single.	Number of children.	Number of abortions.	Number of tappings.	Diagnosis.	Operation.	Drainage.	Results.	Remarks.
2. Bellevue Hospital.	November, 1882.	21	S.	..	..	..	Adherent ovarian cyst.	Ovariotomy.	Yes.	Recovered.	Genuine fibro-cyst of ovary, size of a man's head; every part of the tumor firmly adherent.
8. Private	December 18, 1882.	32	W.	1	1	..	Multilocular ovarian tumor.	Ovariotomy.	No.	Recovered.	Size of full term; double multilocular ovarian tumors.
3. Bellevue Hospital.	April 10, 1884.	33	M.	..	..	..	Ovarian cyst; suppurating.	Removal of part of cyst and drainage.	Yes.	Recovered.	Large suppurative cyst; very adherent.
4. Bellevue Hospital.	May 22, 1884.	23	M.	1	1	1	Parovarian cyst.	Laparotomy; partial removal.	Yes.	Recovered.	Supposed to have been cyst of broad ligament and was tapped; it refilled.
5. Private	November 19, 1884.	32	M.	2	..	..	Pelvic hæmatocele and ovarian tumor.	Ovariotomy and removal of hæmatocele.	Yes.	Recovered.	Hæmatocele of two years' standing; rapid development of ovarian cyst, twenty pounds.
6. Bellevue Hospital.	December 6, 1884.	62	W.	7	2	..	Ovarian cyst.	Laparotomy enucleated.	Yes.	Recovered.	Parovarian pedicle of whole width of broad ligament; extensive adhesions.
7. Bellevue Hospital.	February 9, 1885.	17	S.	..	..	1	Suppurating ovarian tumor.	Ovariotomy.	Yes.	Recovered.	Hectic fever from suppurative peritonitis; case complicated by pelvic abscess; no pedicle could be secured; stump secured into external wound.
8. Bellevue Hospital.	March 28, 1885.	30	M.	3	2	..	Suppurating pelvic cyst.	Ovariotomy.	Yes.	Recovered.	About two quarts of albuminous fluid and pus were evacuated.
9. Private	April 11, 1885.	50	M.	6	..	8	Multilocular ovarian cyst.	Ovariotomy.	Yes.	Recovered.	Some adhesion; patient weak, but recovered without a bad symptom.
10. Private	May 10, 1885.	40	M.	..	..	..	Ovarian tumor?	Ovariotomy.	Yes.	Recovered.	Fibro-cystic tumor of left ovary, with very thick walls and attached uterus; large stump was secured externally.
11. Bellevue Hospital.	May 26, 1885.	24	M.	..	4	..	Ovarian cyst?	Ovariotomy.	No.	Recovered.	Small simple cyst of left ovary.
12. Private	June 6, 1885.	26	M.	1	..	..	Ovarian tumor.	Ovariotomy.	No.	Recovered.	Twenty-five pounds; no adhesion.
13. Private	September 26, 1885.	41	W.	1	..	..	Ovarian tumor.	Ovariotomy.	No.	Recovered.	Papillomatous lining; weight sixteen pounds.
14. Hospital	October 1, 1885.	62	W.	..	..	..	Simple ovarian tumor.	Ovariotomy.	No.	Recovered.	Weight twenty pounds.
15. Private	November 25, 1885.	55	M.	6	..	6	Multilocular ovarian tumor.	Ovariotomy.	Yes.	Recovered.	Weight forty pounds; unable to sit up; very feeble; general anasarca; pulse 125 to 140.
16. Private	December 18, 1885.	30	M.	1	..	..	Gangrenous dermoid cyst.	Ovariotomy.	Yes.	Died; 26 hours, of shock.	Cyst firmly adherent, and when opened fetid gas freely escaped; patient feeble with hectic fever.
17. Hospital	February 15, 1886.	36	M.	3	3	10	Multilocular ovarian tumor.	Ovariotomy.	Yes.	Recovered.	Weight thirty pounds; extensive adhesion; patient very feeble, and nearly died from exhaustion.
18. Hospital	March 28, 1886.	30	M.	1	..	..	Suppurating ovarian cyst.	Ovariotomy.	Yes.	Recovered.	Weight six pounds.
19. Hospital	April 24, 1886.	64	M.	5	..	11	Multilocular ovarian cyst.	Ovariotomy.	Yes.	Died of exhaustion 4th day.	Weight forty-three pounds; extensive adhesion; patient very feeble, cannot lie down, and too weak to sit up.
20. Private	April 26, 1886.	42	M.	3	3	..	Multilocular ovarian cyst.	Ovariotomy.	No.	Recovered.	Weight sixteen pounds.
21. Private	May 8, 1886.	30	M.	2	..	..	Fibro-cystic tumor of uterus.	Ovariotomy; removal of part of tumors.	Yes.	Recovered.	Large cyst filled with papillomas, and a large adherent fibro-cyst of the uterus; one on either side of pelvis.
22. Bellevue Hospital.	October 27, 1886.	49	S.	..	..	..	Multiple cysts and peritonitis.	Six cysts, size of oranges, removed.	Yes.	Recovered.	Two distinct attacks of peritonitis; chronic peritonitis; character of thin walled cysts doubtful.
23. Private	October 29, 1886.	53	W.	..	..	4	Multilocular ovarian tumor.	Ovariotomy.	Yes.	Died; 10 days; exhaustion.	Eighty-pound tumor; suppurating; hectic fever; pulse 140; very feeble; pus discharging from last tapping.
24. Private	November 6, 1886.	43	M.	..	..	6	Multilocular ovarian tumor.	Ovariotomy.	Yes.	Recovered after septic peritonitis.	Sixty-four pound tumor; adhesion to all organs; hot water used to prevent shock; septic peritonitis treated by moving bowels; recovered.
25. Private	November 16, 1886.	42	M.	1	..	..	Complication abdominal tumor; sarcoma?	Ovariotomy and removal of large sarcoma.	Yes.	Recovered after septic peritonitis.	Fifteen-pound tumor, ovarian cyst and adherent sarcoma filling whole pelvis; no pedicle; hemorrhage; irrigation of abdominal cavity prevented shock.
26. Private	December 2, 1886.	33	M.	..	..	..	Ovarian tumor.	Ovariotomy and removal of myxomatous mass and fluid from peritoneum.	Yes.	Recovered.	Left ovary size of orange, and filled with jelly-like mass; several gallons of fluid in peritoneum; right ovary had burst, and myxoma had escaped into peritoneum; omentum, and all other organs studded with myxomata; recovered without temperature; drainage kept up for two weeks.

TABLE III.—*Hysterectomies.*

1. Hospital	January, 1883.	63	S.	..	..	..	Epithelioma of the endometrium of fundus uteri.	Hysterectomy, supra-pubic; stump intraperitoneal.	Yes.	Died of shock.	Patient very fleshy and feeble, and confirmed opium habit; died of secondary shock or atropia, given by mistake, in twenty-six hours after operation.
2. Bellevue Hospital.	February 25, 1885.	49	M.	8	1	..	Fibro-cystic myoma tumor, fifty pounds.	Hysterectomy, supra-pubic; elastic ligature externally.	..	Died in 4 hours; shock and hemorrhage.	Tumor fifty pounds; very vascular; small cysts; broad ligament spread out over it; elastic rubber ligature cut and caused severe hemorrhage under the tumor during the operation.

TABLE III.—*Hysterectomies—Continued.*

No. of case.	Date of operation.	Age.	Married or single.	Number of children.	Number of abortions.	Number of tappings.	Diagnosis.	Operation.	Drainage.	Results.	Remarks.
3. Private	April 22, 1885.	27	S.	..	..	..	Fibromata, eight pounds.	Hysterectomy, supra-pubic; wire suture; stump externally.	No.	Recovered rapidly.	Not very vascular; attached to left cornea; only part of uterus and left tube and ovary removed.
4. Private	June 8, 1885.	44	M.	1	..	..	Multiple fibromata, fifteen pounds.	Hysterectomy, supra-pubic; wire; stump externally.	..	Recovered.	All of uterus and both tubes and ovaries removed; highest temperature 100°.
5. Private	October 10, 1885.	38	M.	..	..	..	Vascular myomata? Very elastic; uterus carried entirely out of reach by vagina.	Hysterectomy, supra-pubic; wire; stump externally.	Yes.	Died in 72 hours from shock.	Large as full term; both tumors under broad ligament and had to be enucleated to secure pedicle.
6. Private	November 26, 1885.	44	M.	1	..	..	Adeno-sarcoma of the endometrium; uterus size of five months' pregnancy.	Hysterectomy, supra-pubic; wire; stump externally.	No.	Recovered.	Patient had been curetted many times, and diagnosis of sarcoma made positive; recovered with very little reaction; highest temperature 100°.
7. Private	September 21, 1886.	44	M.	..	..	..	Multiple myomata; uterus inaccessible from vagina.	Hysterectomy, supra-pubic; wire; stump externally.	No.	Recovered.	Severe hemorrhages, and uterus could not be reached; highest temperature 100°.

TABLE IV.—*Laparotomies.*

1. Private — Removal of kidney.	August, 1883.	..	..	..	..	..	Pyelonephritis; Dislocated kidney.	Laparotomy; removal of kidney.	No.	Recovered.	Intense pain after exercise; kidney filled with abscesses; one of an ounce; pyelitis; complete recovery.
2. Hospital—Ventral hernia and pelvic abscess.	March 18, 1885.	34	M.	3	..	..	Large ventral hernia and pelvic abscess.	Laparotomy; removing abscess and closing hernia.	No.	Recovered.	Drainage-tube had been used; the centre of the abscess was the pedicle ligature of ovariotomy two years before.
3. Hospital—Tubal pregnancy.	June 17, 1885.	29	M.	2	1	..	Tubal pregnancy of left side.	Laparotomy; removal of fœtus, placenta, and tube.	Yes.	Recovered.	Left tube distended by placenta, and fœtus four months' size; suppurating; extensive adhesions; patient had hectic fever.
4. Private—Ventral hernia following laparotomy.	June 24, 1885.	33	M.	1	..	..	Small hernia after laparotomy.	Laparotomy and sewing up hernia.	No.	Recovered.	Hernia, result of laparotomy and drainage-tube.
5. Hospital—Intestinal obstruction.	June 28, 1885.	25	W.	1	..	..	Intestinal obstruction.	Laparotomy and loosening adhesions of sigmoid flexure.	No.	Recovered.	Bands of adhesion, resulting from peritonitis, caused intestinal obstruction.
6. Hospital—Perityphlitis.	August 24, 1885.	22	Male.	..	..	..	Perityphlitis.	Laparotomy.	Yes.	Recovered.	Abscess contained gas and ten ounces of pus; opened and drained; recovery complete in three weeks.
7. Hospital—Exploratory incision.	October 23, 1885.	74	W.	..	..	..	Abdominal dropsy from cancer of liver.	Laparotomy and drainage.	Yes.	Recovered.	Opened and drained.
8. Hospital—Ventral hernia following laparotomy.	November 19, 1885.	25	M.	..	..	..	Small hernia after laparotomy.	Laparotomy and sewing up hernia.	No.	Recovered.	Drainage-tube had been used in laparotomy one year previous.
9. Private—Ventral hernia following laparotomy.	November 23, 1885.	37	M.	1	..	..	Large ventral hernia after laparotomy.	Laparotomy and sewing up hernia.	No.	Recovered.	Hernia followed laparotomy and use of drainage-tube.
10. Private	November 27, 1885.	29	M.	3	..	..	Large ventral hernia after laparotomy.	Laparotomy and sewing up hernia.	No.	Recovered.	Hernia followed laparotomy, two years before, and use of drainage-tube.
11. Hospital—Umbilical hernia, irreducible.	January 21, 1886.	47	..	4	5	..	Large irreducible umbilical hernia of several years' standing.	Laparotomy; reducing and sewing up hernia.	No.	Recovered.	Very fat woman; hernia size of cocoanut; skin ulcerating; painful; several years' standing.
12. Private—Ventral hernia following laparotomy.	February 4, 1886.	29	M.	3	..	..	Small ventral hernia after laparotomy.	Laparotomy and sewing up hernia.	No.	Recovered.	Hernia followed laparotomy and use of drainage-tube, six months ago.
13. Hospital	February, 1886.	30	W.	1	..	..	Very large ventral hernia after laparotomy.	Laparotomy and sewing up hernia.	No.	Recovered.	Second operations; about all of the intestines and part of the stomach hang out; the ring and mass reaches half-way to knees.
14. Hospital—General peritonitis.	March 20, 1886.	36	M.	2	..	..	General acute septic peritonitis.	Laparotomy; washed out and drained.	Yes.	Died.	Peritonitis due to bursting pyosalpinx; patient in very bad condition; large gangrenous abscess evacuated; pulse 150, and patient very low.
15. Hospital—Tubercular peritonitis.	April 12, 1886.	32	M.	3	..	..	Abdominal dropsy from tubercular peritonitis.	Laparotomy and drainage; permanent.	Yes.	Recovered.	Opened and drained; general condition much improved by the operation.
16. Hospital—Tubercular peritonitis.	May 26, 1886.	54	M.	5	..	..	Abdominal dropsy from tubercular peritonitis.	Laparotomy and permanent drainage.	Yes.	Recovered.	Opened and drained.
17. Private—Intestinal obstruction.	October 10, 1886.	50	M.	3	1	..	Intestinal obstruction.	Laparotomy; tying and cutting strong band of adhesion.	No.	Recovered.	Peritonitis ten years ago from sounding to diagnose fibroid tumor; complete obstruction for four days; band of adhesion size of lead pencil, completely occluded ileum; recovery complete.
18. Private — Exploratory incision.	December 21, 1886.	35	..	..	..	..	Perforating gall-stone.	Laparotomy; sac not opened.	No.	Recovered.	Fundus of gall-bladder drawn backward, and adherent walls thickened; stone out, of reach posteriorly; sac not disturbed.

I have selected two cases that I have recently had to give in detail, so as to practically illustrate what I wished to say about the use of hot water within the peritoneal cavity, during and just after operating, to prevent shock, and the use of enemas and purgatives to prevent intestinal obstruction, and in the treatment of septic peritonitis.

Mrs. C——, from Central New York, aged thirty-eight, married; never pregnant; family history good. Her mother died from the bursting of some kind of abdominal tumor. About four years ago she had a pain in the side and soon noticed swelling of the abdomen. Medicines were given to absorb it, but it grew larger, and more than three years ago it was tapped. Since then she was tapped at intervals four times, and about one hundred pounds of fluid drawn off. Dr. Kay, who had recently taken charge of her case, refused to tap her, and she decided to come to New York.

When I first saw her she was enormously distended by a multilocular ovarian cyst. The ribs were lifted up, and the lungs so compressed that breathing was difficult. Her general health seemed to be fair.

November 6, 1886.—I operated by the median incision. The tappings had caused very firm adhesion to the parietal peritoneum, and it was quite difficult to obtain a point to begin separating the tumor.

After considerable fluid was drawn off, but before general enucleation was attempted, to prevent loss of blood from the adhesions and from the inside of the tumor, which was semisolid and vascular inside, the left hand was passed down to the pedicle, and it was clamped with strong pressure-forceps. This procedure certainly had a marked effect in lessening the loss of blood. Sixty-four pounds of fluid and solid matter were removed.

The tumor was adherent to nearly everything in abdominal cavity; the omentum was tied off, and several points tied in the cavity near the liver and stomach, and deep in the pelvis. After the pedicle was tied and the tumor removed, the oozing was checked by the free use of hot-water irrigation to the whole peritoneum, by means of a large fountain syringe, with a rubber tube of large lumen attached.

I noticed that not only was the bleeding checked by the hot water, but that the indications of shock, which were present to an alarming extent, that is, very feeble heart's action, cold perspiration, etc., were at once relieved by the hot water. Some time was taken to sew up the wound and get her ready for bed, and as there was some return of the symptoms of shock, a gallon of hot water—105° to 110°—was allowed to flow into the closed abdominal cavity by means of the glass drainage-tube that had been inserted, and this was squeezed out and another gallon allowed to flow in and emptied out.

The result was magical. After this the symptoms of shock did not return, and at no time was there a subnormal temperature.

After this she did well until the third day, when the gradual rise of temperature and marked tympanites indicated septic peritonitis.

A turpentine enema was given. Very little flatus and no fecal matter passed; but soon the temperature in the axilla reached 104°, and frequent vomiting of coffee-colored fluid began, and pulse ran up to 140, and there was a slight, irritating cough. Her condition seemed hopeless. Knowing from experience that septic poison is nearly always modified by a free movement, and firmly believing that intestinal obstruction exists in some of these cases from lymph adhesions, necessarily so numerous and extensive, I determined to try and secure a movement by means of a quick purgative.

A full-sized seidlitz powder was given, and supplemented an hour later by an ox-gall enema. A copious brownish-colored liquid movement was the result. After this the vomiting ceased. Nutritive and stimulating enemas were given every three hours, and small quantities of kumyss given by the mouth. The drainage-tube worked well, and large quantities of bloody serum were drawn off three or four times each day. She made a slow but steady recovery, and went home well in seven weeks.

Mrs. H——, of Michigan, forty-two years of age, married; one child eight years of age; no miscarriages. Was always a delicate woman, but had no special sickness until last spring, when she had some pain at menstruation, followed later by dragging pains and a fulness about the pelvis. In July last she was six weeks in bed from a prolonged and very severe attack of general peritonitis. When convalescing she noticed an abdominal tumor, which has lately grown very rapidly, until she is now as large as in the eighth month pregnancy. Examination reveals the pelvis filled with a semisolid, elastic tumor, crowding down in the pelvis almost to the anus. The abdomen is filled with what seems to be an irregular-shaped cystic tumor. Sarcoma was diagnosed, and very little hope given for its removal by an operation.

November 17, 1886.—The patient is a delicate woman, with pulse over 100, and has a slight rise of temperature every night. When the abdomen was opened, a cystic tumor the size of a man's hat was found firmly matted in the omentum and intestines. The adhesions were carefully separated. Several times it was necessary to darn up the torn peritoneal coats of the intestines, a method of stopping bleeding points on the intestines that I greatly prefer to any other. The sutures are passed superficially with a flat, smooth needle, and the bleeding points darned up. The cyst was multilocular, with walls of varied thickness filled with thin, clear fluid. There was no pedicle, the tumor being fed from the adhesions to omentum, intestines, etc. Beneath, and somewhat adherent to the cystic tumor, but in every way distinct, was a vascular solid tumor, completely filling the pelvis. The uterus was adherent to its anterior and upper surface, but was not a part of it. The broad ligaments, with the tubes, were spread out and adherent over the tumor, but were not much enlarged, and were not pedicles. The left ovary was enlarged and cystic, the right was missing, and may have been the cyst above, but this had no direct connection with the broad ligament or tube.

The pelvic tumor was rapidly and boldly separated and removed, every effort was made to remove it intact and completely. It burst, and several ounces of thin, yellowish fluid, resembling pus, escaped. The main attachments of the tumor were in the bottom of the pelvis, and the bleeding was very profuse; the pelvis rapidly filled with blood and obscured the bleeding points. By rapid sponging and the use of several powerful pressure-forceps the principal bleeding points were tied. The whole peritoneal cavity was irrigated with hot water—110°. This not only cleansed the cavity of dirty fluid and blood, and stopped the oozing, but acted in a wonderful manner upon the condition of shock. In this, as in the other case, hot water was forced into the drainage-tube and allowed to run out before placing her in bed. Although her pulse was 140, and very feeble, there was no subnormal temperature and very little sweating. Enough morphine was given to relieve pain and prevent restlessness, and nutritive and stimulating enemas were given every three hours, beginning directly after the operation. Some bloody serum was regularly drawn from the drainage-tube. The second day small quantities of kumyss and pancreatinized milk were given by the mouth. On the third day there was some tympanites, with rise of temperature to 103°. Turpentine enema was given; but spinach green, almost incessant eructations began, and her pulse was 150 to 160. A seidlitz powder was given and supplemented by an enema. A large, dark, watery stool was secured, and the vomiting ceased. By nutritive enemas and careful feeding she gradually recovered, and in four weeks was sitting up. She was about as low as I have ever seen anyone, and yet rally and live.

Up to date there are no signs of a return of the sarcoma.

These two cases fairly illustrate what I wish to bring before the Society.

First.—That hot water cannot only be safely used to wash out the peritoneal cavity, and that it is a simple and efficient hæmostatic for oozing points too numerous and small to tie; but that in prolonged operations, and immediately after the operation, free irrigation of the peritoneal cavity with water at 105° to 110° is a powerful and efficient agent, it lessening, if not preventing, the effects of shock. Towels wrung out in hot water have been used to protect the intestines when turned out of the cavity; but I do not know that hot water irrigation of the peritoneum for shock has ever before been suggested. The temperature of the hot water must not exceed 110°, or it may cause shock.

Second.—That the tympanites and vomiting and other symptoms supposed to be due to septic peritonitis after laparotomy, are best overcome by enemas, and if these fail, by a quick purgative. That in these cases, at least, the bowels should be moved, and not kept constipated, as has been generally practised. That it is probable that in many cases the persistent and exhausting vomiting may be the direct result of intestinal obstruction, the result of bands of adhesions constricting the intestines. For a long time I have seriously doubted the existence of septic peritonitis in some cases where the vomiting preceded the rise of temperature and other symptoms of sepsis. By experience I have found it best to move the bowels whenever indicated by tympanites or vomiting, even during the first twenty-four hours after the operation—of course, making a distinction between these symptoms and those due to the effects of ether. The vomiting from ether is likely to be preceded by marked nausea, and is usually violent and gagging in character, while that from obstruction is passive and more like eructation. The quantity vomited is large, and at first brownish colored, and attended with extreme exhaustion and marked tympanites. Without doubt the opium treatment taught by Dr. Alonzo Clark has proved to be the best plan for limiting local peritonitis, and when carefully carried out may prevent death in some cases of general peritonitis; but I am certain that it is not best suited for septic peritonitis following laparotomy. I usually give enough opium or morphine to relieve pain and restlessness, and keep the respiration down to 16, or even 12 in some cases. But when tympanites or eructive vomiting begins, I at once move the bowels by turpentine or ox-gall enemas, or by a seidlitz powder or Rochelle salts.

I took the hint from a remark of Mr. Lawson Tait, that a brisk purgative would cure septic peritonitis, but the method of effecting it and the explanation as to preventing intestinal obstruction are my own.

Leprosy in Norway.—Dr. Herman Mynter, in the *Western Medical Press*, gives an interesting account of a visit to St. Jurgens, the great hospital for lepers in Norway. Regarding the prevalence of this disease he writes: "While in the middle ages the gallows were erected outside the walls of every city to hang every leper who dared to enter, large hospitals are now maintained to take care of these unhappy creatures. A new law has lately entered into force in Norway by which the government has the power to force all lepers into the hospitals, but the opinions about its necessity seem to be divided so far. Leprosy has for years been on the decrease in Norway, from 2,113 cases in 1856 to 1,630 in 1879; possibly on account of the greater civilization and the better knowledge in the population of the disease and of the necessity of its early treatment, possibly on account of the isolation of the infected. The people commence to understand that the earlier the treatment is commenced the better is the prospect of recovery, or, at any rate, such an amelioration of the symptoms that it may be called recovery till a relapse occurs."

THE MEDICATION OF NERVES AND ITS APPLICATION IN THE TREATMENT OF FACIAL NEURALGIA AND OTHER PAINFUL NERVOUS AFFECTIONS.

Being a New Mode of Inducing prolonged Neural Anæsthesia by Pressure applied directly above the Anæsthetic Zone, and consequent Occlusion of the Subjacent Capillaries.[1]

By J. LEONARD CORNING, M.D.,

consultant in nervous diseases to St. Francis' Hospital, etc., New York.

More than fifteen months since, I succeeded in demonstrating, beyond question, that, in order to prolong the local anæsthetic effects of cocaine, it is necessary to keep the drug in protracted contact with the filaments of the sensory nerves. I have been able to find, in the whole range of medical literature, not a single instance in which this physiological fact of cardinal importance was demonstrated previous to the publication of my first paper. The desultory attempts previously recorded were both scientifically and practically barren of result, and for this reason, that, owing to the slovenly and unscientific manner in which they were conducted, the possible sources of error arising from the effects of local anæmiation of the nerve-filaments or pressure upon the nerve-stems were not eliminated. As a consequence of the lack of knowledge concerning the true physiological *modus operandi* of the drug previous to the publication of my first paper, there was afloat in medical literature much slovenly generalization. Looking back to those days, one can recall to mind all manner of fantastic attempts to explain the peculiar effects of the drug; thus one observer believed that its anæsthetic influence was owing to local anæmia; yet another maintained that it exercised some occult influence upon the chemical constitution of the blood; while some were not wanting who expressed confidently the conviction that the effects observed were the result of hyperæmia. Some there were, it is true, with a large meed of physiological perspicuity, notably Hall, and those who worked with him; but it is none the less true that whatever may have been attempted with bandages or clamps, previous to the publication of my first paper, no true physiological principle had been demonstrated which might lead up to a comprehensive method, which might afford practical aid to surgeon and physician alike. The best proof of this is seen in the fact that methods developed by myself constitute the only comprehensive system of inducing prolonged local anæsthesia to be found in medical literature to-day. And again, this same system is the only one which has promised and achieved matters of magnitude in neurological medicine and surgery alike. These achievements are not the result of the empirical use of bandages, clamps, rings, and the like, but they are rather the result of the application of the law which I was the first to enunciate in all its simplicity, viz., that to prolong the anæsthetic effects of a local anæsthetic it is only necessary to keep the drug in permanent contact with the nerve. All this seems trite to-day, and I should not have referred to it, but for the fact that certain individuals would link my destiny, scientifically speaking, with that of clamps and bandages—appliances which, used at first by myself with a view to the elucidation of sound theory by the rigid application of the laws of induction, had subsequently become merely the instruments for carrying out certain phases of the method, which the knowledge thus gained made possible.

How little the carrying out of the law already referred to is dependent upon the use of clamps or Esmarch bandages I now propose to show; and I shall do this, not with a view to the display of scientific acumen, but rather because I believe that what I have to say will prove of some practical value alike to the scientific physician and his client, who may chance to be a sufferer

[1] Read before the Medical Society of the State of New York, February 1, 1887.

from some painful neural difficulty, defying ordinary methods of treatment.

To begin, then, it must now be clear to those who have bestowed any attention upon the subject, that the longer we are able to expose a nerve or its branches to the influence of a medicinal substance, the greater are the chances of setting up chemical changes of sufficient profundity to insure permanent cure. Prolonged local anæsthesia, or some other form of protracted local medication, is therefore in order in the treatment of a large number of painful neural affections. One of the most common and atrocious forms of nerve-pain is facial neuralgia, particularly when it occurs in advanced life; and yet, heretofore, these same face-pains have been among the most obstinate difficulties to cure in the whole range of neurological medicine. I long since saw in these pains a field well adapted to the use of prolonged local anæsthesia; but I also soon ascertained that the means at hand for keeping the anæsthetic in contact with the nerve-filaments—bandages, rings, clamps, and the like—were not applicable to any extent about the face. I was therefore reduced to the necessity of developing some new method of application, in order to meet these unwonted exigencies. Without premising further, I will give an account of this method; here it is:

1. I first introduce the anæsthetic (cocaine) into the skin by means of the electro-chemical method described by me[1] some time since, or by means of the hypodermatic syringe.

2. When the area in question has been well saturated with the medicament, I cover it with a piece of fine wire gauze.

3. By means of a T-shaped block of wood and an appropriate elastic strap (Fig. 1), uniform pressure is main-

FIG. 1.

FIG. 2.

tained upon the wire gauze. Fig. 2 shows this simple apparatus in position, when applied to abolish pain in the region of the temple.

With this appliance I have succeeded in inducing cutaneous anæsthesia of one hour's duration on the forearm, and of nearly two hours' duration on the forehead.

The physiological principles involved in this mode of treatment are easily apprehended. When we press upon the tissue above the anæsthetic zone, we simply cause occlusion of the subjacent capillaries. The object of the wire gauze is to distribute the pressure at given intervals throughout the anæsthetic zone. By this means we avoid pressing out the anæsthetic from the tissues, which transpires if we press directly upon the skin with a perfectly smooth surface. Now, by interposing the fine wire gauze, we occlude the subjacent capillaries without pressing out the anæsthetic. This mode of inducing protracted local anæsthesia is far more effective than that involving the use of clamps, rings, and the like. It is also much more universally applicable than are those devices or the commonly employed bandages. For the purposes of neural medication it possesses all the requisites of an ideal technique, being at once universally applicable and wonderfully simple. In surgery it can render little assistance, its chief field of usefulness being, of course, confined to neurology. In this latter field of practice, however, it has unquestionably a brilliant future. I have employed this mode of treatment in various forms of neuralgia, particularly in those varieties occurring about the face. In two cases of occipital neuralgia a cure was effected—in one instance, after one application; in the other, after two applications. It is in those most distressing neuralgias of the supra- and infra-orbital nerves, however, that it has yielded the most brilliant results. In two such cases, which had failed to yield to all other kinds of treatment, I have been able to effect cures. These favorable results I attribute in great measure to the prolonged exposure of the nerve-filaments to the analgesic influence of the medicament.

Where the pain extends throughout the lower portion of the face, and particularly over the cheeks of thin persons, it is difficult to press the wire gauze against the integument with sufficient precision to cause an occlusion of the subjacent capillaries. Under these circumstances I am in the habit of tamponing the space between the teeth and the inner surface of the cheek. This I accomplish by the aid of ordinary cotton-batting. The technique itself is simple enough. The space between the alveolar process of the upper jaw and the cheek is first to be carefully filled out with small pieces of cotton-batting, and the like process is then to be repeated for the lower jaw. The patient is then told to close his jaws, and the anæsthetic may now be introduced and the wire gauze adjusted over the medicated territory and pressed thereupon with perfect facility. The coaptation of the various mechanical features involved is, under these circumstances, all that could be desired.

I have been thus explicit in describing this otherwise simple technique, because experience has taught me that where there is not some inherent mechanical aptitude mistakes may be committed in affairs even the most simple. I know, too, that it is quite as arduous a task, and often, indeed, a far more difficult one, to show just how a remedial agent should be employed under different conditions, than even to discover it.

Finally, I would observe in this connection that where it is a question of medicating deep-seated nerve-stems, as in sciatica, the nerve should be flooded with the anæsthetic before applying the bandage above the seat of injection. I have recently referred at length to this point in an article published in the New York *Medical Monthly*. And when I speak of flooding the nerve, I do not mean the injection of 30 or 40 minims of fluid into the contiguous tissue, but at least from 100 to 200 minims of a one-half to two per cent. solution (of cocaine), according to the susceptibility of the individual to the physiological effects of the drug, and according to the profundity of the chemical impression which it is desired to produce upon the diseased nervous filaments.

I will merely add that I have sometimes re-enforced the influence of the cocaine upon the nerve-filaments by the supplementary introduction of a certain amount of chloroform or ether into the anæsthetic zone. Under ordinary circumstances such a procedure would be intensely painful, but as thus employed there is no inconvenience to the patient.

These, then, are the principal points involved in this plan of treatment, a mode of procedure which, while constituting a radical departure in principle, is eminently simple and effective. In presenting them thus explicitly to this Society, I am guided by the unpleasant realization that, while neuro-pathology has made, altogether, excellent progress, neuro-therapeutics have remained in the background. This state of things is certainly to be regretted by every practical physician; for if it be the duty of the practitioner to make a brilliant diagnosis, it is equally incumbent upon him to cure his client. It is in this spirit, then, that I have presumed to present these considerations to the representatives of the medical profession of the State here assembled.

[1] See The New York Medical Journal for November 6, 1886.

ICHTHYOL.

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The first public mention of ichthyol was made by Schrötter,[1] a chemist of Hamburg, who described, in an article published in 1882, its origin, manufacture, and peculiarities. He had suggested its use in dermatology to Unna, who received it favorably, and reported, a few months later, the results which he had obtained, stating that it did not act injuriously on the skin. Unna[2] described the preparation as being tar-like in appearance, but yet having nothing in common with any of the tars, either in its odor or in its physical properties, and as containing a considerable proportion of sulphur, equal in amount to about ten per cent. ungt. sulphuris. In using it he had commenced with a five per cent. application, but had gradually increased the strength to fifteen and twenty per cent., and though he spoke conservatively in regard to it, yet he seemed to think well of the results obtained in about thirty cases of eczema and some few of psoriasis.

In 1883 Baumann and Schotten[3] entered fully into the chemical nature of ichthyol. In regard to its manufacture, they quote Schrötter (*loc. cit.*), and describe it as being the result of the action of concentrated acidum sulphuricum upon a clear, yellowish-brown oil, obtained by distilling a bituminous mineral found in the Tyrol, which, according to v. Fritsch, contains the fossilized remains of prehistoric fishes and marine animals. The product obtained was neutralized with soda, and going through further manipulation resulted in the preparation already mentioned. From its being, however, a natrium compound, it had to be distinguished from the original ichthyol, and for that purpose, Unna in an addendum to Baumann and Schotten's article (*loc. cit.*) proposed for it the name of "Ichthyolsulfonsaures Natrium," or, as it is now termed, "Natrium Sulfoichthyolicum." A short time after, another compound, the ammonium, was made, and this latter and the natrium one are the two forms in which it is used in dermatology. Since the publication of Unna's first article, the ichthyol preparations have gained a gradual and more extensive use. This is especially the case in Germany, where they have been prescribed not only for diseases of the skin, but also in rheumatism, neuralgia, etc., and if we form our opinions in regard to them from the literature so far existent, we must believe that the results to be obtained are simply marvellous.

The majority of the articles on ichthyol emanates from Unna, who praises it in ever higher and higher terms, so that we are almost led to regard it as a panacea for all dermatoses; yet in this he is followed by quite a number of others. Among these are Küssner,[4] in Halle; Edlefsen,[5] in Kiel; Lorenz,[6] Ackermann-Weimar,[7] who separately have used it in all forms of eczema, acne, erysipelas, ambustio, etc., both externally and internally, and also to a small extent hypodermatically. Their opinions in regard to it are all equally good, and they seem to be unable to sufficiently extol its value. In 1885 Unna[8] claimed to have cured a case of leprosy by means of it; while Schweninger,[9] after praising its properties, extends its use to a large number of diseases ranging from lumbago to the acute exanthemata. Cascarina[10] also, in Italy, reports good results; yet it is striking to a dermatologist not to find, until after this latter's article, any recognized specialist in his department, with the exception of Unna, contributing something to the literature of ichthyol. In 1886 Shoemaker, however, gives his experience, and Unna again publishes a voluminous article[1] on the subject, and gives at length the results obtained from its use. Unna had, previous to this, abandoned the natrium combination in favor of the ammonium sulphoichthyol, having found this latter to be much the better.

In this last publication Unna places the ichthyol compounds in a class of reducing agents, which contains pyragallol, chrysarobin, etc., and whose chief action is deprivation of oxygen. It is through this action that it causes hornification of the epithelium of the rete, when locally applied to the skin. When used in weak doses this inherent quality is exemplified in the deeper portions of the cutis by a diminution in the size, by a shortening and a narrowing of the arteries, veins, and capillaries. According to Unna these phenomena, taking place in the blood-vessels, are due to a process which is strictly analogous to the hornification occurring upon the external surface, the diminution in the size of the vessels being persistent, and not the result of a temporary muscular contraction. The cause of this he places in the endothelia, which, accustomed to an overabundant supply of oxygen from the blood, become dry and shrunken, when it is diminished, in the same way as do the cells of the stratum spinosum. On the other hand, when applied in strong percentages its action is the contrary, inflammation being the result. These effects likewise follow the internal use of the drug.

This view of the action of ichthyol upon the blood-vessels is one which is, however, rather questionable. It is a well-recognized and acknowledged fact that the arteries and veins owe their power of contracting to the action of the unstriped muscular fibres in their middle coats, and not to their endothelial lining, so that it is perfectly inconceivable how a shrinkage of the endothelium could produce either a temporary or a permanent narrowing of the lumina of these vessels, since, to do this, it would have to possess the power of shrinking, and of remaining shrunken to such an extent as to entirely overcome and to resist the action of the muscular coats. As far as the capillaries are concerned, they have no muscularis, but are formed only of endothelial cells, and do vary in calibre through the contractile movements of the protoplasm of these cells (Landois).[2] But is it probable that under the influence of ichthyol these protoplasmic movements can be entirely stopped, and that the lumina of the capillary can remain unchanged, regardless of the continually varying movements in the circulation of the blood? If there were a satisfactory explanation of the causation of this it might be more acceptable; but such a one is not given. For it is claimed that, when locally applied, ichthyol produces endothelial shrinkage by diminishing the overabundant supply of oxygen obtained from the blood. Yet the endothelium can get its oxygen from the blood alone, so that a diminution of oxygen can only result from a smaller or a vitiated blood-supply, conditions which demand either narrower vessels, or vessels filled with impure blood. Consequently, to diminish the oxygen, vascular contraction must either occur primarily, or there must be some cause which prevents proper oxidation of the blood. But it is stated that the vascular contraction was the result of endothelial shrinkage produced by limiting the oxygen supply, that is, was secondary, and no mention is made of any change in the blood itself. Consequently, according to this theory of the action of ichthyol, the endothelial changes cause, and are caused by the deprivation of the overabundant supply of oxygen; in other words, they are both cause and effect—an impossibility. Similar objections can be advanced in regard to its action when administered internally. It is claimed that the ichthyol has a peculiar affinity for those particular portions of the vascular apparatus which are

[1] Schrötter: Monatssch. f. prakt. Dermat., 1882.
[2] Unna: Ibidem.
[3] Baumann u. Schotten: Monatssch. f. prakt. Dermat., 1883.
[4] Küssner (Report. by Prof. Binz): Auf d. vier. Congresse f. inner. Med. in Wiesbaden, vols. viii.–xi., April, 1885.
[5] Edlefsen: Ibidem.
[6] Lorenz: Das Ichthyol, etc., Deutsche Militärärzt. Zeitung, 1885.
[7] Ackerman-Weimar: Mittheil. ü. d. Ichthyol, Correspondenzblatt. d. Allg. ärzt. Vereins v. Tübingen, 1885.
[8] Unna: Monatssch. f. prakt. Dermat., 1885.
[9] Schweninger: Notiz ü. d. Ichthyol, Charité Annalen, xi. Jahrg. Berlin.
[10] Cascarina: La Rassegna delle Scienze Med. Modena, 1886.

[1] Unna: Ichthyol u. Resorcin. Hamburg u. Leipzig, 1886.
[2] Landois: Lehrb. d. Physiolog. d. Mensch. Wien u. Leipzig, 1886.

the seat of congestion, relieving it by means of its reducing action upon the endothelium. It would be pertinent, however, to ask how, in congestion, in which there is always poor oxygen supply, the ichthyol can possibly exert any influence, since it acts only on the endothelium, which is overabundantly supplied; and under these conditions how can a still greater diminution of a poor supply of oxygen be followed by a shrinkage of the endothelium? Besides, we are asked to imagine a reducing agent circulating in the blood, and yet exerting no influence upon the red blood-corpuscles, the carriers of the oxygen; and a still more important fact, whether the ichthyol undergoes any change in the passing from the stomach and the intestines to the blood, is not considered or mentioned.

It can thus be seen that the theory advanced, explanatory of the action of the ichthyol preparations, is scarcely acceptable. Possibly future investigations will be able to demonstrate the manner in which they act, but it does not seem at present justifiable to accept the conclusions so far given, which, besides, appear to be based to too great an extent upon *à priori* reasoning.

But to return to the practical side of the ichthyol question. Unna found unlimited use for it in all forms of rosacea, both when given internally and when applied locally. The strength of the application had to be varied according as the affection was indolent and irritable. It also rendered invaluable service in all the manifestations of acne, being superior to everything else when given internally, since, according to his view of its action upon the blood-vessels, it remedies all congestive disturbances of the inner organs.

He found it also especially useful in the treatment of eczemas of a neurotic type, but not to such a great extent in the parasitic forms of the disease. He states, however, that its continuous use in these cases is not advisable, but it should only be applied when new patches appear, other treatment being substituted for the ichthyol when these have dried up. It would, however, seem very doubtful, according to this, to which to ascribe the cure of the eruption—to the ichthyol or to the other treatment. Only the best results were obtained in intertrigo and furuncles, especially of the head, when the drug was used in ten to fifty per cent. ointment, or in a mixture with an equal part of a potash soap. The same beneficial action was exerted in lichen urticatus, prurigo, urticaria, erythema multiforme and nodosum, zoster, herpes, and dermatitis herpetiformis. In erysipelas he recommends a twenty to fifty per cent. ointment, in erysipeloid a five per cent. watery solution. Also as an adjuvant in the treatment of lupus, sycosis, and psoriasis. In addition he enumerates keloid, condyloma acuminata, burns, lepra, cicatrices, seborrhœa, and ichthyosis.

The exceeding praise bestowed upon these ichthyol preparations, both by Unna and the other writers mentioned, induced me to prescribe it and to test it in those forms of cutaneous disease specified by them. To that end I have used it extensively during the last ten months in Dr. L. D. Bulkley's service at the New York Skin and Cancer Hospital, in my clinic at Demilt Dispensary, and in private practice. The results obtained were, however, not entirely as favorable as I was led to expect, but yet for certain classes of cases it proved to be of the greatest value. There were, though, objections to it, which, to a certain extent, were of some consequence, such as smell, taste, etc., and even in dispensary practice it required some persuasion to induce a patient to continue for a length of time its internal and external use. Its beneficial effects were also found not to be as extensive as Unna reported, for in some diseases mentioned by him it was tried for many weeks without any benefit, while it rendered others worse. The strength of the application had to be also much diminished, and only rarely was a ten per cent. one borne. In the large majority of cases when that strength was reached or exceeded the patient complained of its causing a considerable amount of pain and burning, and if persisted in, inflammation resulted. Internally it was for the most part well borne, but especially by children. In adults it was frequently entirely rejected by the stomach, while it nauseated others or caused loss of appetite. In only two cases did it seem to relieve portal congestion, and it had no effect whatever on ordinary congestive dysmenorrhœa. In these cases other remedies had to be used to obtain amelioration of the symptoms present. The dose given internally usually began with three drops, and was increased to eight or ten. It was administered in pill form, in gelatine capsules, and in combination with various syrups. Externally it was used in the form of ointment, in aqueous and in alcoholic solution. Both the ammonium and the natrium sulphoichthyol were prescribed, but the best results were obtained from the natrium combination.

Among the diseases which it was expected would be especially benefited by the ichthyol preparations were those depending upon disturbances seated in the sebaceous glands. They were consequently prescribed in many cases of acne simplex and acne indurata. In acne simplex of the face, either acute or subacute in character, the natrium compound was of no benefit. It was given internally in pill form and in capsules, beginning with four drops and increasing to six or eight drop, and externally as a three to five per cent. and ten per cent. solution, with aqua rosæ or with alcohol. Its use was kept up for one, two, and three months, but during that time there had not only been no change nor improvement in the general character of the eruption and in the patient's condition, but in some cases there was a decided increase in all the symptoms present at the first visit. Yet, when the ichthyol was discarded and other treatment was substituted, the cutaneous affection and general condition progressed satisfactorily in every way. The ammonium combination was also used in some cases of acne simplex which had existed for many years, and which were associated with seborrhœa oleosa of a severe type, the skin of the face being thickly studded with comedones, small papules, and pustules, the patients suffering from constipation and dysmenorrhœa. Persistent use, in increasing doses and strong percentages, produced, however, no amelioration of the conditions present, which remained unchanged until other means for their removal were employed.

In acne indurata the natrium ichthyol was also useless, but the ammonium preparation rendered good service. When applied in five to eight per cent. aqueous solution on the skin of the face and neck, which was the seat of large, deeply situated, indolent lesions, showing no signs of activity but requiring a week or more to run their course, it seemed to arrest their development, to remove the inflammatory symptoms, and beyond a dark red stain marking their former site, to cause their disappearance. This the ichthyol produced quite rapidly, but its continuous use did not, however, prevent the reappearance of new lesions, nor did it in any case bring about a cure, notwithstanding that its internal administration was also kept up for a length of time. It likewise proved to be very serviceable in those cases of acne of the chin seen especially in women, and which are usually so obstinate to treatment. In this class of cases it frequently removed the lesions entirely and effectually.

The effect which the ichthyol preparations exhibited upon inflammation, which was more particularly noticeable in the cases of acne indurata mentioned above, is explained by Dr. Unna as being the result of the narrowing of the blood-vessels. That does not, however, seem to me to be a satisfactory explanation, since it makes the inflammatory conditions entirely dependent upon the blood supply, and leaves altogether out of sight the cause of the inflammation, to which the increased vascular activity is always secondary. An inflammatory process does not originate by increased blood supply alone, but there must be some primary factor which gives the impulse and brings about the vascular changes, and it

would seem more rational to ascribe the cessation of the inflammation to the action of ichthyol upon this primary cause than to the narrowing of the vessels. The inadequacy of the theory is furthermore well exemplified in erysipelas. Its cure under the use of ichthyol is also described as resulting from the vascular shrinkage, while no mention is made, and no account seems to be taken, of the possible effect which ichthyol might have exerted upon Fehleisen's coccus present in the lymphatic and connective-tissue spaces of the corium. It must be granted that ichthyol does effect favorably some inflammatory processes, but I have not found that it did, so far, all, a fact which would also militate against the diminished blood-supply being the absolute and only cause of the subsidence of the symptoms, and for this reason, and also basing my views upon what is known at the present day of the causes of inflammation it does not seem possible to accept the theory in question.

It was stated that in rosacea the ichthyol preparations could be applied most liberally and with the best results, but yet I have to record a failure from their use by me. Both the natrium and the ammonium combinations were prescribed, following the comparative essay which was made for all the diseases in which its effect was tried. They were given internally and applied externally, in doses of from gtt. v. to x., and in aqueous solution, and in form of ointment from three to ten per cent. The treatment was kept up in some cases for three months, and yet absolutely no change was observed in the dilated condition of the capillaries, which were just as prominent and evident as before. When acne pustules were present, constituting acne rosacea, they were, however, removed by the ichthyol and the skin became smooth, but the redness remained. Yet, when we compared these results with those obtained from the treatment generally followed, the use of ichthyol offered not the least advantage, for without it the acne lesions could be removed as rapidly as with it, while the dilated vessels could be destroyed, and the redness be caused to disappear in much less time than was taken for the experimental use of the ichthyol preparations.

In regard to eczema, the most varied results were obtained, and its efficacy was in a large number of the forms of this affection questionable. Unna (loc. cit.) makes two divisions of eczema—the parasitic and the neurotic—a classification which I cannot say is borne out by my experience in the many hundred cases of this disease treated yearly by me. Yet, for the sake of testing the benefit to be derived from ichthyol, I followed as closely as possible the description given of the neurotic cases. Several, in which the eruptions occurred in rather circumscribed patches studded with papules, vesicles, etc., situated around both wrists, ankles, and knees, characterized by acute recurrent outbreaks after the process had seemed to have disappeared entirely, were given the ammonium ichthyol internally, and were treated with it locally. Though its use was kept up in one case for four months, in another for three months, and in a few others for varying lengths of time from one to two months, no benefit was derived. The new patches dried up rapidly from its use, it is true, but recurred again without seeming to care in the least about the internal effect of the ichthyol, and not until other treatment was substituted for it could the process be brought to a standstill.

In that class of cases termed parasitic its use was also a limited one. It benefited some temporarily, while others were entirely uninfluenced by it. In acute pustular or vesicular eczema it was not tried, nor in the chronic squamous form of the disease. But in chronic eczema rubrum and in acute outbreaks upon chronically thickened areas of skin, especially when situated upon the legs, depending upon a varicose condition of the veins and associated with those ulcerations known as varicose, ichthyol gave at times marvellous results. The natrium preparation produced here also the best effects, while the ammonium ichthyol caused, even in very weak percentages, pain, burning, and an increase in the inflammatory symptoms. Its advantages were seen more especially in its keratoplastic action, which was very marked in those cases, which, having been brought to a certain point in healing, yet resisted for weeks every attempt made to bring about the formation of solid horny epidermis over the weeping surfaces. In these cases a three to five per cent. aqueous solution of the natrium ichthyol gave immediate benefit, and often after two or three days' use these patches of eczema rubrum were found entirely dry and covered over with epidermis. The same beneficial effect was exerted by the ichthyol upon small superficial ulcerations associated with this condition of eczema rubrum, and one feature was noticed which spoke strongly for the keratoplastic action of the drug, viz., the granulations filling up the base of the ulcer were rapidly covered with horny epidermis, so that there very often resulted a depressed cicatrix, the level of which was that of the height of these granulations previous to the application of the ichthyol.

In the seborrhœa oleosa, situated so frequently around the alæ nasi and upon the cheeks, and accompanied by a considerable amount of congestive redness, the ammonium ichthyol gave very good results, but only when used alternately with other treatment. I had observed in several cases that its use was followed by considerable improvement for the first few days or a week, but after that remained in *statu quo*. If the strength of the application was increased a slight benefit again ensued, but ceased again after a few days, and it occurred to me to stop its use for a short time and then to reapply it. Its good effect was readily manifested by this manner of proceeding, and consequently I continued its use as an alternate application, either every other day with another lotion, or one week ichthyol, one week the other. The explanation of this I would find in the keratoplastic properties of the ichthyol, which, causing a greater and denser formation of epidermis to take place, prevented materially the action of the drug upon the tissues below, so that it was necessary to either increase the strength of the application in order to produce an effect, or to remove by other means the dense horny layer, and thus allow the ichthyol to act upon the fat-glands, etc. I can only add that when it was used in this manner the results obtained were all that could be wished for.

In intertrigo the action of the natrium preparation was remarkably satisfactory, but that of the ammonium was not so good. It was used quite frequently in this affection, which is so common among children, and after a very few days, instead of the bright red, moist surface so characteristic in the inguinal region, and on thighs, buttocks, and abdomen, there was found a dry, slightly reddened skin, or one which was entirely normal. There was no distinction in regard to the age of the patients for whom the ichthyol was prescribed, but the same beneficial effect was obtained in babies a few weeks old and also in adults. In these cases an ointment of the strength of two to ten per cent. was invariably used.

In dermatitis in general, but more especially in those forms which were septic in their origin, and in panaritium, the ichthyol preparations were exceedingly useful both in allaying the pain and in stopping the process.

In burns of the first and second degree the natrium compound gave remarkably quick and good results, removing the pain and soreness and hastening the formation of new epidermis. In several cases in which the skin of the entire hand and arm had been raised up, forming large bullæ, while here and there were patches of variable size on which it had been completely destroyed by boiling lard or steam, the application of an aqueous solution (five per cent.) not only brought about a rapid subsidence of all pain and inflammatory symptoms, but absolute healing resulted in from five to ten days.

In urticaria the advantages claimed were not found.

I only used the ichthyol in chronic cases of this disease, since the acute attacks not only get well of themselves, but their cure is a matter of such ease that their being benefited by ichthyol would prove nothing. It was prescribed, however, for those patients who had been suffering for some time with constant daily recurrent attacks, which could not be traced to either animal parasites, improper food, or any special gastric or intestinal disturbance. Its use was both external and internal, but though in some cases immediate relief was obtained, yet the urticaria returned again in a few days after its administration was stopped, notwithstanding that it had been taken by some patients for one, two, and three months. In other cases no effect whatever was obtained.

The ichthyol treatment was not found to give better results in ichthyosis than other preparations, and while in pruritus its effect was at times very good, yet at others it was absolutely nil.

As an adjuvant in the treatment of lupus, the natrium compound acted remarkably well. After the use of argentum nitricum, or the sharp spoon, the application of a five per cent. ointment—a stronger one was not borne—not only gave the patient great relief, but also brought about a speedy cicatrization of the surface.

The effect of the ammonium compound on cicatrices was also very satisfactory. It softened the dense and hypertrophied ones, caused a great diminution in their size, and allowed a return of a certain amount of natural pliability to the skin. As a rule, a five per cent. ointment was used, and though a portion of the good result was undoubtedly due to the rubbing, yet the advantage of the ichthyol was seen in the more speedy improvement than when massage alone was used. Naturally in an exclusive dermatological practice there is very little opportunity for treating rheumatism or neuralgia, or any of the other general maladies for which ichthyol has been greatly extolled, and though it was used in a few cases in which these affections were coexistent with the skin disease, and gave immediate and most marked relief of the pain, yet owing to the limited test made, I would not venture to draw any conclusions, either *pro* or *con*.

The trial and testing of the ichthyol preparations, the results of which have just been detailed, were not limited to a few cases, but they were prescribed for a large number, in order that warrantable conclusions might be drawn, and I have omitted mentioning affections such as keratosis palmaris et plantaris, psoriasis, erythemata of neurotic origin, etc., in which it was used only once or twice, and in which the results were variable, since I did not consider the number of cases allowed a decision to be made. When, however, a general review of the results obtained from ichthyol in my hands is made, it must be evident that they are far less favorable than those published in the foreign literature, and instead of its applicability to cutaneous disease being almost universal, there would seem to be, on the contrary, rather a limited use for it, and one which, outside of certain special forms of eruptions and functional disturbances in and on the skin, offers not only no advantages over, but is much inferior to, other and older methods of treatment. For those special classes of cases I must unquestionably praise its efficacy, but further than that my results do not allow me to go.

THE latest religious sect in Russia has been founded on the dogma that it is a sin to let a fellow-member suffer the martyrdom of disease. Accordingly, when anybody falls sick, one of the believers goes to him and chokes him to death. The person commissioned for the deed is clad in red clothes, and is known as "the red death." Unfortunately, they do not confine their delicate attentions to the members of the sect alone, but, impelled by a broad charity, seek to cure in their peculiar way anyone, whoever he may be, who has the misfortune to become ill.

Clinical Department.

INTUBATION OF THE LARYNX—RECOVERY.

DR. A. CAILLÉ, Attending Physician for Diseases of Children at the German Dispensary, New York, writes: "On the evening of February 3, 1887, I was requested, by Dr. C. F. Kremer, of this city, to intubate in a case of diphtheria with progressive laryngeal stenosis. The patient, a girl five years of age, came under observation January 25th, after having suffered for several days. The first croupous symptoms set in January 27th; corrosive sublimate, in small doses, was administered internally, and inhalations of a mixture of boracic and salicylic acid solutions ordered. Moderate dyspnœa and cyanosis persisted for a week, during which time shreds of membrane were expectorated daily. On February 2d there was an increase in the dyspnœa and cyanosis. The patient was found in her mother's lap, with cold, clammy skin, cyanotic countenance, and hardly able to struggle for want of strength. Respiration was extremely laborious and slow, with deep recession of the chest-wall at each inspiration; pulse weak, exceeding one hundred and fifty beats per minute, and intermitting at each respiratory atttempt.

"Râles present all over thorax, and no appreciable respiratory murmur. Inspection of the pharynx showed two small diphtheritic patches on the posterior pharyngeal wall. After introduction of a proper-sized tube, which was accomplished without difficulty, a large quantity of watery mucus streaked with blood was expectorated, whereupon the child ceased coughing and breathed with great ease. On removal of the gag and string the patient asked for water in a hoarse whisper, but every attempt to swallow provoked an attack of coughing.

"Twenty minutes after the introduction of the tube the child showed a good color, satisfied expression, was placed in bed and soon went to sleep. In order to avoid a possible pulmonary complication, rectal alimentation was decided upon. An enema was given every three hours. Not a particle of nourishment was swallowed as long as the tube remained *in situ*, *i.e.*, four days.

"On the morning following the operation the temperature was normal, pulse slow and somewhat feeble, with good pulmonary resonance, vesicular breathing, and moist râles all over the lungs.

"On attempting the removal of the tube, in the afternoon of the fourth day, it was found firmly fixed in the larynx by a fold of mucous membrane from the laryngeal surface of the epiglottis, probably œdematous, which had to be pushed aside by the finger before removal of the tube was possible.

"For about an hour after this every attempt to swallow provoked an attack of coughing. On the following morning I made a laryngoscopic examination, which revealed a hyperæmic condition of the epiglottis and vocal cords, but no decubitus. I was not able to obtain a good view of the trachea. A diphtheritic patch was still present on the posterior pharyngeal wall, which remained visible for several days. The child made an excellent recovery and is perfectly well at the present time.

"I am permitted to state, in behalf of Dr. Kremer, who has had an extended experience in the treatment of similar cases, that 'the complete relief afforded by the intubation in this case, and the absence of the necessity of any after-treatment, impressed him very favorably with the O'Dwyer method.'

"Comparing the utility of this method with tracheotomy, it is the opinion of the writer, based upon an experience in twenty-one cases with five recoveries, in all of which the latter operation was resorted to, that intubation is preferable to tracheotomy in many cases of laryngeal stenosis.

"In conclusion, the following suggestions are sub

mitted: 1. Intubation should, as a rule, not be resorted to before actual cyanosis has set in. In the treatment of 'croup' good judgment as to the proper time for active interference is essential. 2. The thread attached to the tube should be as long as possible so that it may be grasped before it gets out of sight, in the event of its having been slipped into the œsophagus. 3. The calibre of the tube could be enlarged, and the advantage of weight retained, by adopting a metal of high specific gravity—viz., platinum, specific gravity 21.5—for its construction, thus facilitating expectoration of false membrane. 4. The danger of pulmonary complication arising from the possibilty of the entrance of foreign substances into the larynx should be avoided by resorting to rectal alimentation or feeding per stomach-tube, after intubation. 5. Dr. Denhard's modification of the gag is worthy of recognition, as it enables the person holding the child's head to control the gag, and avoids displacement of the latter."

PECULIAR EFFECT OF COCAINE.

Dr. J. W. Stickler, of Orange, N. J., reports the following: "On January 21, 1887, a patient came to me, presenting a small cyst in connection with the extensor tendon of the middle finger of the left hand.

"After introducing into the cyst about five drops of a twenty per cent. solution of cocaine, I opened the sac and evacuated its semi-fluid contents. In less than half an hour the finger began to swell, and in less than two hours the swelling was extreme. Very soon systemic disturbance became manifest in the following symptoms: dizziness, headache, pallor of skin, nausea, and diarrhœa. During the first night the patient slept but little.

"January 23d.—Finger swollen, tender to touch, somewhat painful, red and hot, but not œdematous. Same constitutional condition as previous day.

"January 24th.—Finger has same appearance as on the 23d; no œdema; the hand somewhat swollen and slightly œdematous. Diarrhœa has ceased. Nausea slight when patient sits up or walks. Still complains of dizziness.

"January 25th.—No change in the appearance of the finger, but the hand is more swollen. No evidence of suppuration. Patient able to sit up without suffering from either nausea or dizziness.

"January 26th.—The swelling of the finger is somewhat diminished, although it is still tender, and somewhat painful. The general disturbance has disappeared, but the appetite is greatly impaired. After the last date the swelling subsided quite rapidly, so that by the last of the month the use of the joint was regained.

"As has been said by others who have written concerning the effect of cocaine, congestion is of frequent occurrence, but I have witnessed only this one instance of alarming congestion following the hypodermatic use of the drug. I call the condition 'congestion,' because the enlargement of the finger reached its utmost limit in about two hours after the use of the cocaine, and the finger had about the same appearance as would have been produced by constriction of the part with an elastic band.

"The systemic disturbance was also more pronounced than is usual. I am, therefore, led to believe that the hypodermatic use of strong solutions of cocaine is attended with considerable risk, unless it is known prior to its employment just how susceptible the patient may be to its influence."

MANAGEMENT OF TEDIOUS LABOR FROM RELAXED ABDOMINAL WALLS.

Dr. H. L. Ellis, of Brooklyn, writes: "In those very common and vexatious cases of labor in multiparæ, where the abdominal walls are lax, the pains nagging, and progress *nil*, and yet where no obstruction or malpresentation exists, I employ an expedient so simple, safe, and effective, that, at the risk of learning that my device is old, I will describe it. To me it is new; nor have I seen it mentioned. If one will watch the abdomen in these cases he will notice that it is giving not only no assistance, but no support to the uterus, and that, as a result, there is practically no *vis a tergo*, the force of the uterine contractions being almost equally dissipated in every direction. To furnish the necessary resistance, I girdle the patient's abdomen with a strip of elastic webbing, eighteen inches wide by four feet long, having several transverse rows of eyelets in one end, and a row of hooks in the other. This I apply snugly in an interval between the pains. The *next* pain almost invariably leaves the girdle from one to two inches slack. I then advance the hooks till all is again snug, and so on; my experience being that from four to six pains accomplish delivery. It is noticeable that these are *good* pains, often the first the patient has had, and are, I believe, the direct result of the support and resistance supplied by the girdle. I believe, too, that when this manœuvre is resorted to, the uterus does not become so exhausted, and hence is not so liable to subsequent relaxation and hemorrhage. A good substitute for the elastic webbing is a stout towel, fastened with four safety-pins. It is easily applied, supplies a firm, evenly distributed pressure, is readily regulated, and, I believe, will safely and speedily end many an anxious vigil."

AN OBJECTIVE PERCEPTION OF CORRIGAN'S PULSE.

Dr. E. Meierhof, Attending Physician, Out-door Department, Mount Sinai Dispensary, communicates the following: "Generally speaking the pulse is a subjective phenomena, but recently I had an opportunity to observe the pulse by the eye. A patient having marked cardiac disturbance involving both mitral and aortic valves came under observation. An examination of the radial and carotid arteries revealed the condition frequently observed in aortic disturbance, the so-called water-hammer pulse of Corrigan. Continuing my examination it occurred to me to use the ophthalmoscope to see if any disturbance of the branches of the arteria centralis retinæ could be observed, although the patient did not complain of any disturbance of the visual organs, nor did there appear any. In the erect image it was observed that with the synchronous movements of the carotid artery the main branches of the retinal artery made marked excursions in contracting and dilating, the movements resembling those made by whip-cord when cracked; the undulations naturally being from the trunk of the artery outward to its branches. The examination was made three times at intervals of five days. The patient when first seen was ordered digitalis, etc. At the third visit, which was at the end of two weeks, the undulatory movements referred to were unobservable, but while the radial pulse did not show the same amount of disturbance as was first observed, the carotids were still noticeably disturbed, the difference no doubt being due to the difference in the size and situation of the vessels. What benefit such an observation can have in dealing with disorders of the circulation I am at present unprepared to answer, but it demonstrates the growing utility of the ophthalmoscope in general practice for observing not only disturbances of the cerebro-spinal nervous system, but also those of the circulation. It is possible that some means may be discovered or invented to determine the condition of the blood through the medium of the vessels of the fundus oculi, the walls of which are transparent. One of the first observations made of the fundus oculi in connection with the circulation was due to embolism of the arteriæ centralis retinæ. A case under recent observation revealed the coincidence of endocarditis and muscular rheumatism, thus showing also that the circulation plays a direct and important factor in disturbances of the eye."

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THE EARLY DIAGNOSIS AND REMOVAL OF TUMORS OF THE BLADDER.

VESICAL neoplasms are generally admitted to constitute a variety of tumors of difficult diagnosis, at least in their incipience, of great gravity to the patient, and frequently of considerable perplexity to the surgeon. Dr. Guyon, in a recent communication to the *Progrès Medicale*, shows that an early diagnosis is sometimes possible, and should be followed by immediate removal of the offending growth. Although we are disposed to doubt the propriety of calling excision a "radical cure" in cases of malignant new-formations, we gladly admit that early interference is based on sound surgical principles and constitutes far better practice than the fatal policy of procrastination.

According to Guyon, hæmaturia, when persistent and uninfluenced by the external conditions of the patient, such as bed-rest, hygienic surroundings, and appropriate treatment, justifies the diagnosis of a neoplasm seated somewhere in the urinary passages. In the particular case forming the basis of his remarks, Guyon also emphasizes the absence of frequent micturition. An important aid toward localizing a new-formation the French surgeon finds in the presence or absence of symptoms allied to renal colic. Whenever the kidney becomes the seat of destructive lesions producing hæmaturia, painful symptoms occur; but when tumors invade it, little or no discomfort is felt.

As a further diagnostic point, Guyon asserts that when a kidney increases in volume it becomes movable. This gives rise to a new physical sign, which he has named *ballottement rénal*. In order to ascertain its presence, bimanual exploration is necessary.

Two fingers are placed behind, above the ilium, and by a succession of little shocks the attempt is made to force the kidney against the other hand placed lightly over the antero-lateral abdominal region, which corresponds to the location of the organ to be examined.

In order to accurately localize a vesical neoplasm, conjoined manipulation is always essential. The bladder is completely emptied, and, with one finger in the rectum, the surgeon's other hand forcibly presses down the supra-pubic region. For the internal exploration of the bladder Guyon employs only soft instruments, which are without danger to the patient. Finally, to convince himself that the blood comes from the bladder, he recommends the following simple procedure: First, empty the bladder, then wash it several times until the injected fluid returns clear, and now direct the patient to empty the bladder himself, at the same time assisting the manœuvre by gentle pressure. If bright-red, sanguinolent fluid appears, the source of the blood is sure to be in the bladder.

In Guyon's case the microscopical examination of the urine was entirely negative, and he thinks this is generally so in recent tumors. We cannot accept this statement, believing that the character of the growth, and especially its consistency, will influence the point in question. In the very soft and friable neoplasms histological elements appear early in the urine, whereas in the opposite forms they may be missed, even at a late stage of the disease. The age of the growth is of only secondary moment in this connection.

From this brief description of the essential points in Guyon's method of early diagnosis, it will be seen that it is applicable to many cases, but also that it will not succeed in all. All the symptoms mentioned by him may, indeed, be observed in tuberculosis of the bladder, and some of them may be absent in cases of very small, hard growths.

As regards the operative procedure of the French surgeon, it consists in simple ablation, followed, when necessary, by excision of the vesical wall. Guyon, in carrying out excision, proceeds from within outward, claiming that this is a better method than that of Sonnenburg and Antal, because it permits the surgeon to perform a "regular and complete dissection" without any danger of separating the bladder from its anatomical connections.[1] But excision is only necessary in those cases where the malignant tumor is already surrounded by a zone of infiltration. Guyon has found, however, that such infiltration occurs earlier than is generally supposed. And it is precisely in this circumstance that he finds the justification for the earliest possible interference consistent with scientific accuracy of diagnosis.

In all those cases where the tumor is not surrounded by infiltration, Guyon simply removes the projecting portions, then scrapes the base, and, after cauterization, closes the vesical wound with catgut sutures cut short and allowed to remain.

THE MORTALITY OF TYPHOID FEVER IN NEW YORK.

WE have received a number of letters from correspondents in different parts of the country, expressing surprise at the high rate of mortaltity from typhoid fever in this city. Some suggest special modes of treatment, the adoption of which they think will be of service in reducing the high death-rate of the disease, while others kindly intimate that if "New York doctors were less scientific and more practical, a diagnosis of typhoid fever would not always be equivalent to a death-sentence."

These letters have been called forth by a paper read before the Section on Practice of the Academy of Medicine, and published in THE MEDICAL RECORD of January 8, 1887. The writer gave the mortality-rate for the

[1] Sonnenburg, of Berlin, and Antal, of Buda-Pesth, performed resection of the bladder by cutting down upon it from above, and thus opening the peritoneal cavity. Sonnenburg stitched the cut ureter to the abdominal wall.

past ten years, based on the statistics of the Board of Health for that time. These statistics showed that there were 7,712 cases reported, of which number 3,184, or 41.28 per cent., died.

These figures, we feel compelled to say, are misleading, and do not indicate, even approximately, the actual mortality of the disease. The statistics of the Board of Health are necessarily accurate, excluding errors of diagnosis, as regards the number of deaths from a given disease, but they are notoriously inexact as far as concerns the number of cases actually occurring. And the same holds true, though not to so great an extent, concerning the birth-rate. The reason why the figures are inexact is not through any fault of the Board of Health, but is simply the fact that physicians do not report their cases. Many physicians who ordinarily report cases of contagious diseases do not consider typhoid fever sufficiently contagious to warrant a report, and many others do not report any cases, unless they anticipate a fatal issue. Indeed, instances are by no means rare of a report of a contagious disease being withheld until just before the death of a patient, when, in order to escape the possible danger of an enforcement of the penalty for non-compliance with the law, the Health Board is notified.

That this is so, a little reflection will convince anyone, for it is very evident that there must have been an average of more than seven hundred and seventy-one cases of typhoid fever per annum in this city during the past decade. And it therefore follows that the mortality of the disease is not so high as these figures would lead one to suppose.

SEXUAL DISORDERS AND SYSTEMATIZED QUACKERY.

The increased number of quacks and quack-agencies in this city appealing to victims of sexual troubles and of venereal disease, and the boldness and offensiveness of their advertising methods, are working an injury which demands more than ordinary notice. In late years the older methods have changed, and, from a business point of view, improved, and it has become the practice for these quacks to work under the guise of agencies or companies. They have "laboratories," consultation-rooms, and most elaborate methods of advertising by circulars, hand-bills, and through the lower grades of newspapers. So complete is the system that there is hardly a young man or growing youth in the city who does not get hold of some disgusting, or, to him, terrifying notice, picturing the horrible results of self-abuse and seminal losses. Thousands are thereby frightened into a mental state half approaching insanity. Many of them go or write to some of these advertising firms, put themselves under treatment until every spare penny has been wrung from them, without, as a rule, any good being done. On the contrary, an increase in their troubles often results, and even a permanent state of mental and nervous depression is brought about.

The young man once in the toils of these unholy "agencies" is subjected to influences tending to keep him there. There seems to be a list kept of those applying at one place which is circulated among quacks all over the country. Consequently the once victimized party is in constant receipt of new circulars describing the virtues of new "pearls," or pills, or special apparatus. Many of the circulars contain grossly inaccurate descriptions and illustrations of the sexual apparatus, the bladder, stomach, brain, etc.

We have before us a specimen circular, depicting with equal force the despairing future of the masturbator and the unequalled virtues of a certain suppository. It has also cheap wood-cuts of "a brainless child born of a masturbator," a hydrocephalic child with the same ancestry, and of a half-naked man behind the bars of a cage, representing a person "made insane by self-abuse!" No words can tell the agony, the shame, the despair, which such publications cause in a large class of half-educated youths who get hold of them.

A young man, subsequently found to have a fine physique, no actual sexual weakness, and to be suffering only from two or three emissions monthly, wrote to a physician: "Although I am able to work, yet every day the constant thought of my condition, my blasted and miserable life, is with me always, and keeps me in a constant despairing state of mind."

This is the "state of mind" which it is the aim of the quacks in question to produce to as large an extent as possible. The more morbidness and despair, the more money in their pockets, for they fatten on the distress of their victims. Here is the foulest possible prostitution of medicine, a systematized attempt to create disease and then get money from it.

These individuals and companies do not confine their practice to sexual troubles, but plaster the telegraph poles and other places with announcements of "swift cures" for "private diseases," and send circulars advertising cures for all kinds of chronic troubles. Blanks are furnished, to be filled out with information regarding the person and the disease; descriptions of how to send urine by mail, price-lists for different sets of pills, or different courses of treatment, are also furnished.

In fine, these establishments have become a public nuisance to the intelligent community, and a serious public harm to those unable to judge of their merits and honesty.

THE DEMONSTRATION OF ISOLATED TUBERCLE-BACILLI.

Biedert has for years been engaged in studying tubercle-bacilli, mainly from a practical and clinical stand-point. He has recently published in the *Berliner klinische Wochenschrift* a method for the detection of these microbes in cases where they occur in such small numbers that the ordinary processes now in vogue may fail to reveal their presence. It is scarcely necessary to point out the importance of detecting even the smallest number of the bacilli in question. Those who are convinced of the correctness of Koch's views regarding the specific nature of tuberculosis will require but a single bacillus to give them the clue to a suspected case. The unbelievers, on the other hand, will fail to be convinced by the demonstration of myriads of microbes. For the believers, then, a single bacillus will speak as plainly as countless numbers could, since it has not yet been clearly shown that their abundance signifies anything more than their presence in very small proportions. In either case we are told to assume a specific tubercular process. But more than this we are not yet at liberty to infer.

Biedert proceeds as follows: He takes about a table-

spoonful of the suspected sputa, and adds thereto twice that quantity of water and fifteen drops of a strong solution of soda.[1] This mixture is boiled until it becomes quite fluid, and then diluted with about two ounces more of water. After being again boiled the mixture is nearly homogeneous, and free from lumps and particles. If on cooling a thin fluid does not result, more water may be added. A conical vessel now receives the mixture, and after two or three days the supernatant fluid, having deposited its bacilli, can be decanted. The sediment, after energetic stirring, can now be examined in the ordinary manner. A practical point deserves notice in this connection. The addition of soda to the expectorated matter renders its albumen soluble, and after drying the film may scale off the glass during immersion in the staining fluid. To obviate this, Biedert advises that a little fresh egg-albumen be added to the drop of sediment which is to be spread on the glass. It may then be safely dried and passed through the flame as usual. It may be here stated that this new method is not available for sections of tissue.

Biedert regards his process as an eminently trustworthy test for bacilli. It certainly does away with the tedious and time-robbing method of examining numerous cover-glass specimens. For practical purposes it may be well to collect the sputum of several days, especially where expectoration is scanty.

Biedert says, in proof of the success of his method, that sputum examined in the ordinary way may show very few bacilli, whereas the same sputum, subjected to the above treatment, will be found to fairly teem with them. The most favorable time for examining the mixture is after two or three days' standing. After that period no further increase in the number of bacilli is found. As a further proof of the utility of his method, Biedert says that if he mixed a tablespoonful of sputum, known to be without bacilli, with a single drop of tubercular sputum, specimens prepared in his way invariably gave positive results.

It is surely not too much to say that the great majority of physicians nowadays attach a certain amount of value to the discovery of tubercle-bacilli in the sputum of patients having chronic lung-trouble. By all these Biedert's method will be received as a welcome addition to practical bacterioscopy.

[1] In a later issue of the Berliner klinische Wochenschrift (No. 2, 1887), Biedert states that seven to eight drops are usually sufficient, since fifteen drops occasionally interfere with the ready staining of the bacilli.

THE WORKING-TIME OF THE PHYSICIAN.

STATISTICS have at various times been published showing the mortality-rates among physicians and the causes of death. But we have met with no such careful analyses of the life-history of the medical body as have been furnished by Dr. Friedrich Böhm regarding the physicians of Bavaria (*Münchener med. Wochenschr.*, No. 4, 1887).

In the year 1886 there were in Bavaria 1,787 physicians. The average age of these was 45.3 years. In cities of 10,000 inhabitants the age was somewhat higher—viz., 48.7, while in the country it was 44.3. This fact is due probably to older physicians moving to the city after having accumulated sufficient means or earned sufficient reputation to enable them to do so.

The average age of physicians in 1863, twenty-three years before, was 24.7 years; and the decline is due to the relaxation in requirements, which has brought a larger element of young men into the profession.

This is shown in another way. From 1854 to 1886 the percentage of physicians between the ages of twenty-four and forty has steadily risen from 27.4 (in 1854) to 44.1 per cent. (in 1886). The proportionate number of physicians between the ages of forty and sixty—in other words, the working-time of physicians—is not in such narrow limits now as formerly. Among 1,000 doctors there are 441 between the ages of twenty and forty, 394 between forty and sixty, and 165 above the age of sixty.

The youngest age at which medical men are found in Bavaria is twenty-four, and the age of those beginning practice ranges from twenty-four to twenty-six years. Twenty years ago the age was from twenty-five to twenty-eight. This is all in most extraordinary contrast with the state of things in this country, in which the average age of medical college graduates is certainly not over twenty-three years, while many are graduated who have barely passed their majority.

The average duration of life of the physician is not given, but the figures collected show that of 100 physicians starting in practice 63 die before the fiftieth year, 82 before the sixtieth year, and 90 before the seventieth year. Only ten per cent. of those who start out in medical life, therefore, reach the allotted period of threescore years and ten.

This is not a very good showing, but it is an improvement on the state of things thirty years before, when, according to Dr. Böhm, only five per cent. reached the period in question.

SHALL PHYSICIANS PAY FOR THEIR MEDICAL SERVICES.

IN the Annual Address before the American Dermatological Association, made last year by the President, Dr. Edward Wigglesworth, some sentiments were expressed which will be likely to arouse discussion and protest. He says:

"The day has gone by for remitting fees to clergymen, or even to other physicians. The necessity for such a condition of things, due to the mutual relations of the single parson and the two physicians of country villages, a century ago, has gone forever. The members composing the medical profession furnish to-day a gratuitous clientèle enough to occupy the whole time of the best specialist, who is naturally the adviser selected, and thus to ruin him financially. If he does not in return ask advice from each of those he has treated, and he cannot, even if he would, of all—then where is the *quid pro quo* upon which the whole absurdity is based? The particular one whom he does select as his family-physician makes, naturally, more visits to the family of the specialist than the latter is likely to return, and should be remunerated accordingly. Business is business, and exactness in money matters promotes good feeling. In Boston, I rejoice to say, the specialist pays his family-physician, and feels for him a warmer regard and a more

cordial appreciation in consequence, while at the same time preserving his own self-respect."

Dr. Wigglesworth appears to think that the physician should not be expected to render a service unless there is a *quid pro quo*. This is placing our profession upon a mercantile basis with a vengeance. It has been taught in days gone by that there was something above trade in the practice of our art; and one of the best evidences that we were more than a guild of tradesmen has been the fact that our professional services were to be freely and gladly extended to all brother-practitioners of medicine. The sentiment which prompts physicians freely to extend mutual help will, we trust, never die out among the mass of the profession, whatever may happen to the specialists.

The view advocated by Dr. Wigglesworth is a plain announcement of the fact that the specialist expects to be paid when a general practitioner goes to see him, and that he, the specialist, expects to pay his family-physician.

A case in which this subject acquired a curious medico-legal importance recently came up in St. Louis. The late Dr. Van Studdiford, an old, wealthy, and retired physician, during his last illness called in Dr. Waldo Briggs. The case was difficult and arduous, calling for attendance at all hours of the day and night. After the patient's death, Dr. Briggs (after consulting with professional friends) presented a bill of $500, which was allowed by the Probate Court. Against this the widow and family appealed, basing their action mainly upon the ground that it was "not customary for one practitioner to charge another." The Court decided in favor of Dr. Briggs.

SURGERY IN TEXAS.

We have received the report of the Special Committee on Surgery, appointed by the State Medical Society of Texas, Dr. George Cupples being chairman and reporter. It makes a quarto of seventy-two pages and embraces the tabulated statistics regarding 4,293 operations performed by Texas surgeons. The report is a valuable one; it represents an immense amount of intelligent labor, and cannot fail to be a stimulus and benefit to the very wide-awake practitioners of the Lone Star State. The statistics show good, and even brilliant results in most lines of surgery. In amputations of the thigh the number of cases is 132, with 50 deaths; those of the leg are 166, with 27 deaths; those of the arm, 65, with 63 deaths; and those of the forearm, 66, with 2 deaths. These figures are even better than those, for example, of Max Schede, in which the operations are done with every possible antiseptic precaution. It must be remembered, however, that as the statistics collected by the Texas Committee are voluntarily contributed, it is quite possible that all the bad cases are not reported. The report shows that the Texas surgeon is quite able to cope with all varieties of surgery, even the most difficult.

ON FALSE LOCOMOTOR ATAXIA.

Locomotor ataxia is one of the best known of the chronic special diseases. It has indeed been so extensively written upon and so widely advertised that an undue tendency apparently exists to see locomotor ataxia in all cases showing ataxia and sensory symptoms.

Recent researches have shown that a good many cases showing the signs of locomotor ataxia were really not this disease, but were the result of poisons, of neuritis, or the indication of some brain disorder. Some of the apparent cures of locomotor ataxia are explained on this theory.

In a thesis for the doctorate in medicine (Paris, 1885), M. Leval-Picquechef has collected the numerous cases of false locomotor ataxia, or pseudo-tabes, and analyzed them. The results reveal in an interesting way the large number of causes, many of them quite common, which may produce a clinical picture a good deal like that of posterior spinal sclerosis.

The symptoms of locomotor ataxia have been produced by a sarcomatous tumor affecting the posterior spinal roots (Bennett), by small tubercular masses in the posterior columns (Topinard), by an arachnitis with a superficial marginal sclerosis of the cord (Ribail), and even by a diffuse sclerosis localized especially in the posterior columns. Posterior sclerosis is also produced by ergot poisoning and by pellagra. But apart from these, the symptoms of locomotor ataxia may be caused by various intoxicants, by infectious diseases, in diabetes, and in certain neurasthenic states.

Pseudo-tabes is produced as the result of alcoholic intoxication, and is one form of alcoholic paralysis. It occurs in adult life as the result of long-continued excesses in alcohol of any form, rum and brandy being the kinds most commonly used. It has been noted, so far, oftenest in England and Germany. It develops most frequently in women and in the better classes of society.

Lead in very rare cases causes a condition of pseudo-ataxia. The same occurs from poisoning by sulphide of carbon. Jaccoud, Berbes, and lately Ross, have mentioned instances in which workmen exposed to the vapor of this substance developed temporary ataxia.

Arsenic also has been known to cause pseudo-tabes, both when taken medicinally and even when absorbed into the system from poisonous wall-paper.

There seem to be hardly any of the severer infectious maladies which may not cause as a sequel the development of pseudo-tabes. The most frequent cause, however, is diphtheria. Of the eruptive fevers small-pox and measles have been followed by pseudo-tabes, while pneumonia, erysipelas, and typhoid fever have produced paralytic troubles closely resembling it.

It has for some time been known that in diabetes the knee-jerk is often abolished, and that the patient may suffer intensely from neuralgic pains. Very well-developed forms of pseudo-tabes have also been observed by Raymond, Dreyfus, and others. Since glycosuria sometimes appears in true tabes dorsalis, the diagnosis is not always easy.

American observers have asserted that pseudo-tabes may occur in cases of neurasthenia or spinal congestion. Dr. Leval-Picquechef cites an observation by Kowalensky on tabes dorsalis illusoria, and one by Huchard and Féré in support of this view.

In pseudo-tabes the cause of the symptoms is probably in almost all cases a multiple neuritis. The disease is characterized by its rapid evolution and in the complete

recovery which follows. The immobile pupil, disorders of the bladder, and rectal centres are not present, while there is usually some motor paralysis, which is not the case in true tabes.

CATHETERIZATION OF THE TRACHEA AND BRONCHUS. MANY will yet remember the fierce controversy in medical circles, raised by the late Dr. Horace Green, over the question of the direct medication of the trachea and bronchi, by carrying medicated solutions beyond the glottis. Dr. Green proved that it could be done, but his treatment was too heroic, and fell into disuse with the invention of powerful spray apparatus.

The discovery of cocaine took away the great practical obstacle to the application of this method, and of late it has been revived again by Reichert, of Rostock. This physician described his apparatus in the *Deutsches Archiv für klinische Medicin*, and showed it at the last meeting of the German Congress of Naturalists and Physicians. By its means he injected directly into the trachea and bronchi solutions of chloride of zinc, salicylic acid, menthol, and olei menth. pip. Dr. Schäffer, of Bremen, confirmed his results.

In are cent issue of the *Berliner klinische Wochenschrift*, No. 7, Dr. Landgraf, an assistant at Professor Gerhardt's clinic, describes an experience in the catheterization of the trachea which shows that this procedure is not difficult, and that it may have a considerable range of therapeutic usefulness. A man, fifty-two years of age, presented himself at the clinic suffering from symptoms of left-sided bronchial stenosis. He had attacks of coughing followed by dyspnœa of a severe character, and physical signs of interruption to the passage of air into the left lung. The man had had syphilis, and the diagnosis lay between a syphilitic gumma pressing on the bronchus and an aneurism. Antisyphilitic and all other treatment failed to make any impression on the symptoms. It was therefore finally decided to catheterize the trachea, and, if possible, the bronchus. The larynx was anæsthetized by pencilling it with a twenty per cent. solution of cocaine, and a ten per cent. solution of the same drug was sprayed into the trachea. A catheter was then introduced with the greatest ease, and was pushed down for the distance of 28.5 ctm. (over eleven inches), when an obstruction was felt. At a subsequent trial it passed the obstruction and was introduced for a distance of 32 to 36 ctm., measured from the incisors. This procedure was repeated several times weekly.

The relief caused was enormous. The patient had no more attacks for a month, and was rejoicing in his prospective recovery when an attack of unusual severity seized him and he died.

The autopsy showed the presence of an aneurism of the descending aorta compressing the left bronchus.

Dr. Landgraf thinks that though the relief caused by the catheterization was so temporary, it at least showed how well it is tolerated and how easily it may be carried out, and he suggests the wider extension of the practice of direct medication of the sub-laryngeal air-passages.

THE MEDICAL DEPARTMENT OF THE UNIVERSITY OF TENNESSEE held its twelfth Annual Commencement on February 22d, and graduated a large class.

News of the Week.

THE IZARD COUNTY MEDICAL SOCIETY has condemned the present medical laws of Arkansas, and declares them to be a total failure, and declares that it will not accept the legal certificate of registration as any evidence of the physician's qualification to practise medicine.

A MEDICAL PROFESSOR WITHOUT SHAME.—According to the *Indiana Medical Journal*, the professor of surgical anatomy in a physio-medical college in Indianapolis announces in the daily papers that he possesses a remedy which "will cure membranous croup every time, and is the only thing that will." The formula is as follows:

Tr. sanguinaria	drachms iv.
Fl. ex. spikenard	drachms ij.
Oil pennyroyal	gtt. ij.
Simp. syr. (heavy).	q. s. ad ounces iv.

Mix.—Dose for a child of one year, ten drops, and add five more for each additional year. Give every half-hour, hour, or two hours, as the urgency may require.

THE SOCIAL AND POLITICAL ADVANCE OF THE PHYSICIAN.—The *Saturday Review* announces that the medical men of England are advancing in social position and political importance. This fact is indicated by the increasing number of physicians yearly commissioned as magistrates and elected to Parliament. *The Lancet* treats this information with a mixture of mild disdain and incredulity. To an American the social position of the average English doctor appears a very poor, not to say intolerable one, and if it is improving we are glad to hear of it. The English country doctor, however, is now more highly esteemed, not, as it seems, because he knows more, but because, owing to the extension of the franchise, "he has come into the possession of political power."

MANHATTAN EYE AND EAR HOSPITAL VERSUS MANHATTAN HOSPITAL.—The General Term of the Supreme Court has ordered unanimously that the so-called Manhattan Hospital, in Manhattanville, formerly the Manhattan Dispensary, shall not use its name of Hospital, because there is danger of confusion arising from the use of the two names, Manhattan Hospital and Manhattan Eye and Ear Hospital.

THE LONDON THROAT HOSPITAL, for diseases of the throat, nose, and ear, was opened on February 14th last, at 204 Great Portland Street, W., under the general supervision of a General Committee, associated with an Executive Committee which shall include the medical staff that will preside over the management of the hospital directly. The promoters of this hospital were lately members of the medical staff of the Hospital for Diseases of the Throat, Golden Square, where they served as medical officers and teachers for many years. The chief object of this institution will be the free treatment of the sick and necessitous poor, and it will be the aim of the management to avoid a system of pauperizing the people, by requiring small weekly payments from those patients whose earnings will enable them to contribute toward the hospital expenses. At the head of the medi-

cal staff stands the name of W. McNeill Whistler, M.D., M.R.C.P., well known here, not only from the fact that he was born in the United States, but because of his meritorious writings on the special diseases in which he has made himself an authority. Among his associates is Edward Woakes, M.D., whose writings on diseases of the ear are also well known. The medical staff has seven members.

A Medical Microscopical Society in Brooklyn.—A meeting of Brooklyn physicians interested in microscopy was held at the house of Dr. Herbert Fearn, 196 Clermont Avenue, Brooklyn, on Wednesday evening, February 16, 1887, for the purpose of organizing as the Medical Microscopical Society of the City of Brooklyn. The specific object of this society will be the consideration of medical microscopy. Meetings will be held on the first Wednesday evening of each month. The following officers were elected: William H. Bates, M.D., President; Arnold Stub, M.D., Vice-President; Frank M. Hoyt, M.D., Secretary; Henry D. Bliss, M.D., Corresponding Secretary; Albert Brinkman, M.D., Treasurer.

This is the Season when the history of medicine is reviewed from the earliest time to the present day by eloquent commencement-orators. It is a period when thousands are refreshed with the story that medicine is the noblest and grandest of professions, and when the young medical graduate is surprised by being told that he is just on the threshold of a new career in which he is destined to hush the groans of millions with the joy of health.

An Opinion on Dr. Mathews Duncan.—Mr. Tait, writing to the *British Medical Journal* regarding the Liverpool Hospital quarrel, says of Dr. Duncan, what we believe is more of a compliment than he intends. He says of him: "Dr. Duncan's views are warped by a belief which I respect as honest, but regard as wholly mistaken and most unfortunate for 'good gynecology.' This belief is to the effect that the majority of women who give a detailed, sequent, and consistent story of pelvic suffering, 'have nothing the matter with them.' This has passed into a by-word, and has immensely diminished Dr. Duncan's sphere of usefulness in the practice of medicine." We venture to say that Dr. Duncan holds no such extreme view as represented, and that if gynecologists with pet operations dominating their minds were to absorb a little of Dr. Duncan's conservatism their sphere of usefulness would be greatly enlarged.

The Fifty-fifth Annual Meeting of the British Medical Association will be held in Dublin on August 2, 3, 4, and 5, 1887, under the presidency of Dr. Withers Moore. An address in medicine will be delivered by W. T. Gairdner, M.D., F.R.C.P.Ed. An address in surgery will be delivered by Edward Hamilton, M.D. An address in public medicine will be given by the Rev. S. Haughton, M.D., F.R.S., D.C.L.

Physicians Intending to be Present at the International Congress.—Among the list of gentlemen announced by Dr. D. J. Hamilton as intending to be present at the International Congress, we find among surgeons: Mr. T. Bryant, Mr. C. Heath, and Mr. Jonathan Hutchinson, of England. Among gynecologists and obstetricians: Mr. Lawson Tait, of England; Professor Gustav Braun, of Vienna; Professor Hegar, of Freiburg; J. Amédée Doleris, of Paris. Among neurologists and alienists: Drs. J. Althaus, G. H. Savage, D. Hack Tuke, D. Ferrier, H. C. Bastian, Sir J. C. Brown, William J. Mickle; A. Eulenburg, of Berlin. Among dermatologists: Dr. George Thin, of London; Hans von Hebra, Neumann, and Kaposi, of Vienna; P. E. Unna, of Berlin. Among general physicians: Drs. B. W. Richardson, Charles West, Eustace Smith, George Johnson, Sir E. Sieveking, N. T. H. Waters, J. S. Bristowe, Pye-Smith, of England; Professor Dujardin-Beaumetz, of Paris; Drs. Lewin, Gusserow, and Veit, of Berlin. Chiari, of Vienna, is also down as intending to be present.

French Surgical Congress.—The third meeting of the French Surgical Congress will take place in Paris in April, 1888, at a date which will be announced shortly, under the presidency of Professor Verneuil. The following questions are arranged for debate at the Congress: 1, On the Treatment of Gunshot Wounds of the Visceral Cavities; 2, On the Value of the Radical Treatment of Hernia as a Permanent Cure; 3, Chronic Suppuration of the Pleura, and its Operative Treatment; 4, Recurrence of Tumors after Operation (Causes and Prevention).

The Antiseptic Treatment of Summer Diarrhœa.—In an article on the above subject in the New York *Medical Journal*, Dr. L. Emmet Holt claims superiority for the antiseptic method of treating diarrhœa, and recommends especially salicylate of soda and naphthalin in the disease. There appears to be something of a *non sequitur* in the conclusions, since salicylate of soda is not especially antiseptic, ranking very low in Miguel's scale.

Changes in the Professorial Staff of the Paris School of Medicine.—M. Dieulafoy, Professor Agrégé at the Paris Medical Faculty, has been elected Professor of Medicine in place of M. Peter, who is appointed to another chair. M. Faraboeuf, Director of the Practical School of Dissection, has been chosen to succeed M. Sappey in the Chair of Anatomy. M. Gariel, Professor of Medical Physics, has been appointed to the Chair of Physics in place of M. Gavarret. A law recently passed ordains that no professor of medicine shall continue in office after the age of seventy. MM. Sappey and Gavarret have attained that age. M. Pajot, in terminating his course of lectures at the Clinique de la Faculté de Médecine, announced that he preferred retiring from office before reaching the age of seventy. In the midst of the applause which followed M. Pajot's speech, a curtain was drawn aside, and a bust of the Professor placed on a pedestal, draped in velvet and gold, was discovered. M. Peyron, Director of the Assistance Publique, then came forward to thank M. Pajot, in the name of the poor of Paris, for the devoted kindness which he had shown toward them for forty-five years.

The Physiology of Opium-narcosis.—M. Liebermann, in a monograph upon opium-smoking, states the conclusion that the deep narcotic sleep of opium is due to severe cerebral congestion.

RUSH MEDICAL COLLEGE held its forty-third Annual Commencement on February 15th and graduated one hundred and thirty-four students.

THE MEDICAL ASSOCIATION of Georgia meets at Atlanta on April 20th.

THE MEDICAL DEPARTMENT OF THE UNIVERSITY OF LOUISVILLE held its fiftieth Annual Commencement on March 1st. Its graduating class numbered eighty-seven.

THE NEW YORK CITY BOARD OF HEALTH.—The appointment of Mr. James C. Bayles as President of the Health Board has met the general approbation of non-partisan citizens. Mr. Bayles is a sanitarian and not a politician.

BELLEVUE HOSPITAL MEDICAL COLLEGE.—The twenty-sixth Annual Commencement of this college was held on Thursday last, when a class of one hundred and thirty-four was graduated. The exercises were pleasantly varied by an adjournment to Delmonico's, where a supper was served and speeches made.

SEWER-GAS AND MALARIA are said to pervade the chambers of our multiple-million-dollar Capitol at Albany.

DIED FROM DIPHTHERIA.—Dr. E. L. Andrews, a young physician of West Farms, N. Y., died last week of diphtheria contracted from a patient. We have recently learned of three physicians of this city who suffered from diphtheria contracted in their practice, but who have fortunately recovered.

VACCINATION AGAINST SNAKE-BITES.—Professor Sewell, at the University of Michigan, Ann Arbor, has been carrying out some experiments in Pasteurization, taking for his subject the virus from the sacs of rattlesnakes. By attenuation and cultivation he has succeeded in protecting pigeons and rabbits by inoculation, so that they will withstand inoculation of five or six times the strength of uninoculated pigeons or rabbits.

THE INTERNATIONAL CONGRESS.—Mr. Lawson Tait has been elected one of the Vice-Presidents of the International Congress. We learn that Congress appropriated $10,000 for the International Medical Congress.

THE BEQUEST OF A MEDICAL EDITOR.—The late Dr. Wakley, editor of *The Lancet*, has bequeathed to the University College Hospital of London, for and on behalf of the Hospital, his freehold residence, Heathlands, Longcross, Chertsey, and eight acres of land, for the purposes of a convalescent home for patients from this hospital, as a memorial of his late father, Thomas Wakley, Esq., M.P., the founder of *The Lancet*, the home to be called the "Wakley Convalescent Home." He also bequeathed £1,000 to be expended in the maintenance of the convalescent home, at the rate of £200 per annum.

BERIBERI ON THE ISTHMUS OF PANAMA.—A case of beriberi, originating at Panama, has been observed in Paris by Dr. P. Marie.

THE RESULTS OF NEW YORK CITY BABY-FARMING.—The city has been trying the experiment of putting the infants brought to Randall's Island Hospital out at various homes in the country at Mount Vernon. Fifty or sixty infants are being cared for in this way; so far, with a reduction of mortality from thirty to about five per cent.

PROSECUTED FOR SKIN-GRAFTING.—An extraordinary case of prosecution and persecution has recently occurred in the Atlanta, Ga., courts (*Atlanta Med. and Surg. Journal*). On August 30, 1886, in the presence of Drs. Hardon, Westmoreland, and Howell, Dr. Henry Wile, of that city, proposed to a boy of thirteen years to submit to the removal of some small skin-grafts from his arm to be placed upon an extensive ulcerated surface on the head of his cousin, a little girl somewhat younger, whom he had accompanied to the office. The boy readily consented, and minute grafts were excised without causing him any inconvenience. In the afternoon of the same day the father of the boy went to the office and charged Dr. Wile with having cut "his son's arm to pieces." He subsequently swore out a warrant charging him with assault and battery. Upon trial the case was promptly decided in favor of Dr. Wile.

THE LATE PROFESSOR SCHROEDER died of a cerebral abscess. It was well circumscribed and might have been reached and opened by a surgical operation, but the combined skill of Berlin's best physicians, including Professors Westphal, Gerhardt, Leyden, and von Bergmann, could not reach a positive diagnosis. Professor Schroeder six years ago had an attack of ophthalmia and erysipelas from a septic matter which got in his eye. He recovered, but from that time, however, he had been subject to attacks of giddiness and syncope, which were attributed to weakness of the heart. Last winter he was again attacked with serious illness, and he was sent to Nice. In November last year threatening symptoms again made their appearance, but he rallied, until fourteen days before his death symptoms of serious brain disease confined him to his bed. The diagnosis lay between cerebral abscess, cerebral tumor, and meningitis, but no nearer decision could be reached. Death occurred and the autopsy was conducted by Professor Virchow, and reported on by him before the Berlin Medical Society on the 9th ult. In the posterior part of the right cerebral hemisphere was an encapsuled abscess, about the size of a walnut. This had broken through toward the right ventricle, causing sharp hemorrhage and acute inflammation. In the mediastinum, also, near the right lung and the œsophagus, remains of a smaller abscess were found. No other trace of disease was discoverable.

THE PUBLIC MEETING FOR THE PURPOSE OF RAISING FUNDS for a building for the Woman's Medical College of the New York Infirmary, held on Monday last, was well attended and was successful in every particular. Already the sum of $15,000 has been subscribed.

THE JOURNAL OF LARYNGOLOGY AND RHINOLOGY is the title of a new monthly devoted to the specialty indicated by the title. It is edited by Dr. Morell Mackenzie and Dr. R. Norris Wolfenden. The first number, published in January, makes a very creditable appearance, both as regards contents and mechanical make-up. We extend our welcome to this new aspirant for professional favor.

THE "SACRAMENTO MEDICAL TIMES" is the title of a new medical monthly published at Sacramento, Cal., and edited by James H. Parkinson, L.R.C.S.I. Sacramento has not been much heard of in medical circles, and we are glad to find that it is to have an organ

Reports of Societies.

NEW YORK ACADEMY OF MEDICINE.

Stated Meeting, March 3, 1887.

CHARLES CARROLL LEE, M.D., VICE-PRESIDENT, IN THE CHAIR.

DR. WM. H. THOMSON read a paper on

THE PATHOLOGY AND TREATMENT OF EPILEPSY,

based on notes of sixty consecutive cases in private practice. The definition of a disease should include the most invariable features of the affection; the essential must never fail to be present. He did not consider epilepsy as necessarily a convulsive disorder. He gave the following definition:

Epilepsy is a disease characterized by sudden and temporary loss of function on the part of one or more cerebral centres, an attack being induced by an afferent impression in every case.

The essential and invariable element in epilepsy is suddenness. It is the single truly sudden disease. Other diseases may be rapid in their attack, but never sudden in the sense that epilepsy is. Among the neuralgias, angina pectoris may be an exception. Therefore all recurrent symptoms, whether sensory or motor, which are characterized by suddenness are ominous, because suggestive of epilepsy. Consequently *petit mal* was more real, as well as more objectionable, than *grand mal*.

Dr. Thomson then reviewed some of the theories that have been advanced with reference to epilepsy, as Hughlings Jackson's theory of the explosive discharge of nerve-cells from increased functional activity or increased nutrition; disturbance of Nothnagel's convulsive centre in the medulla; Robertson's upward discharge from this centre; Gowers' involved theory, etc. The conclusion reached was, that all normal motor phenomena, except the purely voluntary, were directly regulated by the sensory department of the nervous system in all those respects which imply regulation of degree of the motor forces and regulation of the time of their liberation and the channels through which these are liberated, whether singly or co-ordinated.

Given a moderate restraint of nerve-cells and -centres by each other, and we have the status of bricks in an arch; but withdraw one brick and the arch may behave as if shaken by an earthquake, when the disturbance all came from the sudden loss of the function of one brick.

The objection to the explosive sensory-motor theory was that it required more than one mechanism for the production of the same effect. The answer to the claim that Hitzig has produced epilepsy by limited motor excitation alone, and that it has been caused by irritation of the cortical motor area alone, etc., was that we do not get rid of the sensory-motor relations when the cranium is entered.

As to the *treatment of epilepsy*, Dr. Thomson emphasized the great importance of *perseverance*, for many obstinate cases had finally yielded. The first indication was to *improve nerve-nutrition*, and the most efficient agent that could be employed for this purpose was *cod-liver oil*. The prophylactic influence of this remedy was very noteworthy with reference to nervous diseases occurring in neurotic families, and particularly epilepsy.

The next remedy recommended for nerve-nutrition was *phosphorus;* the syrup of the hypophosphites (U. S.) acidulated by the addition of one-fifth part of dilute phosphoric acid.

Total exclusion of butcher's meat for two years should be insisted upon; animal diet predisposes to convulsions and convulsive diseases.

Check rapid eating, because of the liability to irritate the convulsive centre in the medulla through the influence of crossing nerve-fibres.

The *bromides* are the most efficient remedial agents for the control of the attacks. These are to be aided by remedies which prevent them from impoverishing the blood, and they may be assisted very materially in producing their peripheral action by the use of the *red-pepper or mustard pack* before going to bed. Add a teaspoonful of red pepper to a pint of hot water, and wrap the body in flannel wet with a solution of this strength.

When muscular twitchings of the face occur during sleep, he regarded them as evidence of persistent cortical irritation, and advised the use of corrosive sublimate in doses of $\frac{1}{24}$ of a grain.

When symptoms referable to the digestive tract were present, *belladonna* with *oxide* of *zinc* should be used, pushing the belladonna to the production of its physiological effects.

When foul breath accompanies the gastric disturbance, *resin* of *turpentine* should be given as an antiseptic with belladonna.

The continuous use of *chloral hydrate* was beneficial. *Digitalis* was indicated when epilepsy was characterized by symptoms belonging to the genito-urinary tract, or by vascular symptoms.

The discussion was opened by DR. L. PUTZEL, who, from a clinical stand-point, thought that the claim that epileptic attacks were always sudden could not be sustained, as it was not at all infrequent for prodromata, gastro-intestinal, mental, or otherwise, to precede the outbreak for two or three days. The suddenness of the attack could not be regarded as characteristic and the essential of epilepsy.

He had always understood that Jackson's theory referred to the explosive discharge of nerve-cells, not implying that it is limited to the motor nerve-cells. According to Jackson the visual disturbances in migraine are really epileptiform, and he claims that migraine belongs to that class of disorders. This proves that he does not limit the explosive discharge to the motor cells. Furthermore, Dr. Putzel could not understand what there was that led Dr. Thomson to believe that sensory impulses inhibit motor impulses; for a sensory impulse is generally a stimulus that sets a motor impulse into activity.

He thought that the paralytic attacks of *petit mal* were rare. The paralytic conditions were usually seen after severe motor convulsions, and were then probably due to exhaustion.

The pleural epilepsy which had been referred to by Dr. Thomson, produced by injections into the pleural cavity, did not strike him as valuable for the purposes of argument, because there was nothing to prove that the convulsions were epileptic. He did not think that the single manifestation of anything was epileptic; it was epileptiform, but not until it had been developed several times could it be regarded as true epilepsy. Convulsions from teething, which were probably due to local irritation, were not epileptic, but epileptiform, although the mechanism was probably similar to true epileptic attacks. In the one, however, there was a purely local lesion, which gave rise to reflex action by general brain-discharge; while there was in the other case some unknown condition of the brain itself, probably in the higher centres, which was the fundamental lesion—if what cannot be seen may be called a lesion—of epilepsy.

With regard to belladonna, he had used it in nocturnal epilepsy chiefly, in conjunction with the bromides. He agreed with Dr. Thomson that the disease was one of impaired nutrition, and therefore he prescribed cod-liver oil.

DR. PUTNAM-JACOBI referred to the question of rapid mastication, in connection with Lauder Brunton's directions that the fainting person be induced to sip cold water for the purpose of arousing him from syncope. According to Gowers the aura, in about one-fifth of the cases of epilepsy, is of the special senses, which indicates that the lesion is cortical. The statement made by Dr.

Putzel concerning paralytic conditions seemed to be contradicted by Gowers, who cites one or two cases in which there was a sudden loss of motor power.

Dr. W. H. Draper said that he had listened to Dr. Thomson's paper with much pleasure, though he could not say that the author had thrown much light on an obscure subject by his ingenious theory, or that he had seriously shaken existing hypotheses as to the pathology of epilepsy. He believed that it was generally admitted that a large proportion of attacks probably had their origin in the convulsive centres of the cerebral hemispheres, and it was thus easy to account for the temporary aphasia and other transient psychical and sensory auras which sometimes preceded or even occurred without the motor discharge.

The question of the determining cause of the phenomena of an epileptic attack, whether it is the result of vaso-motor spasm or not, is still undecided; and Dr. Thomson's hypothesis that it is a withdrawal of the control which the sensory functions of the nervous system exert over the motor functions does not appear to make the cause more clear. Dr. Draper agreed with Dr. Putzel in believing that it was not right to regard convulsions of peripheral origin, like the convulsions of dentition and gastro-intestinal irritation, as the exact parallel, pathologically, of idiopathic epilepsy, except in so far as they might both involve a sensory cause. He cordially concurred in what Dr. Thomson had said in regard to the treatment of epilepsy, and especially as to the importance of improving the nutrition of the nervous centres by cod-liver oil and tonics. He thought that, next to this, the most important point in the management of the disease was a careful study of the possible peripheral irritations which might provoke the attacks. These were very often found in errors of diet. He could not agree with Dr. Thomson, however, in what he had said about the exclusion of animal food from the diet of epileptics. On the contrary, he had been inclined to believe that the gastro-intestinal irritations which were the exciting causes of epileptic seizures were much more likely to follow the indigestions caused by overfeeding with the carbo-hydrates and fermented liquors. He preferred a diet of milk and animal foods for his patients, and had had excellent success in diminishing the frequency of the seizures by regulating the diet upon this principle. The next important point in the treatment of the disease was, of course, the administration of some drug which would diminish the extreme irritability of the convulsive centres; for this purpose no remedy had yet been discovered which equalled in certainty and in power the potassic bromide. Yet, despite all these measures, the experience of every physician would recall cases in which every form of treatment failed to control the disease, cases in which the patients preferred to have their fits rather than suffer the self-denials imposed by dietetic restrictions, and especially the misery of mental and physical hebetude caused by large doses of the bromides.

Dr. E. D. Hudson thought that the most plausible explanation of an epileptic attack was found in an initial condition of cerebral anæmia, due to spasmodic contraction of the cerebral vessels, that gives rise to disturbance of the equilibrium of the nerve-force. He believed that convulsive attacks might become true epilepsy if allowed to persist. The best remedies at our command are the bromides.

Dr. Thomson said he never intended to imply that epileptic attacks had no prodromata. But a prodroma was not an attack. His reference was to the actual steps in the attack, and in those epilepsy was to be distinguished from all other diseases by its suddenness.

With regard to Hughlings Jackson's theory, he would say that he had understood that, while its author does not refer to motor discharge only, he specially dwells upon the motor discharge as the cause of the convulsive attack.

As to a sensory influence being stimulating in character, he should regard it as regulating the character by some kind of withdrawal or directing of motor impulse.

With reference to confounding all convulsions with epilepsy, his own observations had led him to the conclusion that he was unable to distinguish between convulsions of epilepsy in children and epileptic attacks occurring in dentition. He would be exceedingly obliged if either Dr. Putzel or Dr. Draper would tell him what an epileptiform convulsion was.

Dr. Draper said that, in saying that a convulsion was epileptiform, he simply conveyed the idea that it had the form of epilepsy, but not the substance or nature of it. He thought there was an essential difference between epilepsy in its most aggravated form and an epileptiform spasm as the result of either extreme peripheral irritation or extreme central excitability.

Dr. A. D. Rockwell then read a paper on

THE VALUE OF ELECTRICITY IN THE TREATMENT OF EPILEPSY,

in which he said that, if he were asked whether, under any circumstances, electricity alone was capable of curing epilepsy, his answer necessarily would be, exceedingly doubtful. Although he had never heard of a case that had been cured by electricity, he was not prepared, by any means, to say that such a result was impossible, or even highly improbable. If, however, he should be asked whether or not electricity was of any value in the treatment of epilepsy, he would unhesitatingly and confidently say that it was. He felt warranted, from his own experience, in going even further than that, and was willing to say that in a certain proportion of cases in which the patients fail to receive more than temporary benefit from the bromides they may recover entirely when this plan of treatment is re-enforced by the judicious and persistent application of electricity. What this proportion is must be a question for further and more general investigation.

Epilepsy is not, like chorea, frequently self-curative, and the books and journals say that benefit attends the use of a score or more of different remedies. Many of them are undoubtedly of value in treating the disease, and in some cases effect an absolute cure. Electricity has been found to act favorably upon the epileptic seizures; but what should more especially entitle it to consideration was its peculiar efficacy associated with other and more generally approved remedies, after these remedies alone had failed to give more than temporary relief.

The suggestion that the best results will be obtained in the treatment of epilepsy only when we call to our aid every measure that tends to develop vital power is one which commends itself to all. It is not alone, therefore, on the theory of the special influence on the nervous centres, or on cerebral circulation, that we employ electricity as an adjuvant to the bromides, but also because of its undoubted powerful constitutional effects. Above all, it is a *tonic*, and yet its therapeutical range is sufficiently wide to include both stimulating and sedative effects.

Therapeutically speaking, there are indications for the use of electricity in epilepsy other than those which call for its general tonic influence or its effects on the circulation.

An important indication for its use is the hyperexcitability of the nerve-cells in epilepsy. By submitting theoretical considerations to practical tests he had been convinced that this hyperexcitability, in some cases, has been held in check by the action of the galvanic current as readily as by the bromides. In several cases of *petit mal*, especially, he had observed that applications of the galvanic current to the cervical ganglia of the sympathetic produced precisely the same effect, in interrupting temporarily the frequency of the paroxysms, as did the bromide of potassium.

An illustrative case was cited, in which treatment, electrical and medicinal, was persevered in for fifteen years, and up to this date, nearly four years from the last epileptic seizure, the patient—a woman who was twenty-six years of age when the first attack occurred—had been entirely free from even a suggestion of epilepsy. From being hysterical, passionately unreasonable, and personally unattractive, the graces characteristic of the best feminine type had been either restored or come as a new growth. Three other cases also were reported, in which electricity, combined with other measures, had produced markedly good results.

Dr. Rockwell then presented the unsatisfactory side of the picture. The total number of cases of epilepsy which he had treated, with especial reference to the value of electricity, since 1874 was twenty-eight. All were in private patients. Ten abandoned treatment too quickly to be worthy of the slightest consideration in a statistical estimate of the value of any remedy. In three cases the treatment was persisted in sufficiently long to enable him to give electricity a fair trial, and he was compelled to admit that it seemed in no way to aid the bromides in controlling the disease. It was to be noted that in two of these three cases the seizure occurred in the daytime and while awake, and in the other the attacks took place both night and day.

Eight other cases, of which he had records, were under observation from six weeks to nine months. In all of them good effects of the treatment were manifest in a greater or less degree; and in two of them, one of which was under observation seven and the other nine months, the notable improvement was unquestionably due, in part at least, to electricity. Four of the remaining seven cases appeared in the present paper, and the others had been recorded in THE MEDICAL RECORD, April 6, 1878.

The conclusions which Dr. Rockwell had reached, after making observations for thirteen years, were:

First.—Electricity possesses a certain value in the treatment of epilepsy. It is not known, nor is it claimed, that used alone it can ever cure epilepsy. When, however, it is used in connection with the bromides its value is unmistakable, and a certain number of patients recover who otherwise would remain uncured.

Second.—The good effects of electricity are seen especially in cases in which the attacks occur in the night, although day attacks have been successfully controlled.

Third.—Central galvanization and general faradization have been the most efficacious methods employed.

Fourth.—When electricity fails to either cure or aid the cure, it is often efficacious, by the method of general galvanization, in affording grateful relief from undefinable nervous symptoms recognized under the term neurasthenia.

Fifth.—The tolerance of bromides can be increased and bromic acne diminished by the systematic use of electricity.

Sixth.—Electrical treatment must be administered with care and judgment. All interruptions of the current should be avoided in central galvanization, as the shock is liable to hasten rather than prevent an attack.

DR. W. H. THOMSON said that he had not had any experience in the use of electricity in the treatment of epilepsy, but he could understand that it might be serviceable as a peripheral irritant, the same as the mustard-pack.

DR. E. D. FISHER had not used electricity for the purpose indicated, but the principle of peripheral irritation would be that upon which he would employ it.

DR. ROCKWELL said that he did not lay very much stress upon the peripheral irritation, for to produce that the faradic current should be used. The galvanic current was what he had relied upon, on account of its influence on the nerve-centres, and it does not apply to the periphery.

The Academy then adjourned.

SECTION IN OBSTETRICS.

Stated Meeting, February 24, 1887.

E. L. PARTRIDGE, M.D., CHAIRMAN.

DR. MALCOLM MCLEAN read a paper on

RUPTURE OF THE UTERUS,

in which he analyzed the subject with special reference to the performance of laparotomy.

What shall be done to save the life of the woman when rupture of the uterus occurs? This question had been discussed by many, and among them Dr. Harris, of Philadelphia, in a paper published six years ago; and the answer was, practically, to open the abdomen as promptly as possible, whether the child has been delivered or not. The performance of laparotomy was the key-note to the radical treatment of this accident.

Dr. McLean then studied the etiology, the pathological anatomy, the symptomatology, the diagnosis, the prognosis, and the treatment of rupture of the uterus, occurring at full term of pregnancy or during labor. He was inclined to place the frequency of its occurrence at a higher figure than Dr. Harris had, who recorded it as one in four thousand, and he did this because he believed that rupture occurred in a considerable number of cases in which it was either unrecognized or was never made known. In other words, he believed that its occurrence was more frequent than the statistics of published cases would lead us to believe. The majority of cases occurred in primiparæ. He had met with two traumatic and two spontaneous ruptures. It occurred most frequently at the junction of the body and the neck.

The characteristic symptoms were sudden cessation of labor pains, recession of the presenting part, shock, external hemorrhage, and the presence of the fœtus in the abdominal cavity.

Dr. McLean gave the details of his cases, in one of which recovery took place. There was sudden cessation of pain, he prepared to deliver with the forceps immediately, but found that the head had receded, and he then introduced his hand into the uterus, when he found that the child had escaped, except the head and one arm. He seized the head, and, with only a moderate amount of traction, was able to draw the child back so that he could grasp one thigh, when he performed version and delivered rapidly. He then delivered the placenta. The uterus contracted readily and firmly. The laceration was probably subperitoneal. The shock was slight. A large hæmatocele quickly formed upon the right side of the uterus. Thorough antiseptic treatment was instituted and maintained, and the woman finally made a good recovery.

The author of the paper then addressed himself to the consideration of the question, What shall be done to save the woman's life when rupture of the uterus has taken place? At this point special reference was made to the recent discussion held in the London Obstetrical Society, the general tenor of which was that, under all circumstances, it was advisable to perform laparotomy, even though afterward the child was delivered through the natural passages.

While Dr. McLean believed that there were many cases in which laparotomy was the operation that should be performed, he also believed that delivery through the natural passages should not be thrown out of consideration entirely, and that in cases of incomplete rupture delivery by the vagina should be attempted, even if it became necessary to perform laparotomy afterward.

In cases in which rupture occurred before dilatation of the os was complete, or in which liquor amnii had escaped into the peritoneal cavity, or in which loops of intestine had entered the uterine cavity, etc., we should be ready to perform laparotomy, and, under some circumstances, Porro's operation. Dr. McLean pre-

sented the specimen, from one of his cases, in which the placenta was found hanging in the rent.

Dr. C. C. Lee was invited to open the discussion, and said that he thoroughly agreed with the spirit underlying Dr. McLean's paper, in which he had taken the position, if he had understood him correctly, that, given a case of rupture of the uterus, it was best to assume it to be incomplete until proved to be complete, and that it was better, if the membranes be intact, not only to attempt to deliver through the natural passages, but to persist in the effort rather than expose the woman to the additional shock incident to laparotomy. But, judging from his limited personal experience and from the experience of others, he should think that Dr. McLean's successful case was a very remarkable one indeed, and that his views would apply to an extremely small number of cases. He believed that as rupture of the uterus occurred in actual practice, the procedure adopted by Dr. McLean in his case would be almost impossible. There was no doubt that, when the woman was suffering from shock, the additional shock from opening the abdominal cavity was terrible to assume. But, when death was so nearly certain as it was under these circumstances, desperate measures were justifiable and demanded.

When the head cannot be reached readily with the forceps, or version cannot be performed promptly, he believed that more harm would be done by persistence in these operations than would come from laparotomy. Dr. Lee then referred to two reported cases in which laparotomy was performed successfully under very unfavorable circumstances.

If the patient was *in articulo mortis*, he thought that most surgeons now would attempt to deliver the child in a manner different from that indicated by Dr. McLean, and he could not share in the deprecation which the author of the paper had brought against the plan of treatment generally approved of in this and other countries.

Dr. W. T. Lusk continued the discussion, and said that he had seen three cases of spontaneous rupture of the uterus. In the first the child did not escape into the abdominal cavity, and delivery was accomplished with the forceps. The woman died within twenty-four hours. He thought that, in this case, it would not have been of much service to have performed laparotomy. On the other hand, laparotomy would not have contributed toward the death of the woman.

In the second case he made a fatal mistake. He went to the hospital and saw the woman, who had been brought in from the street, and she was in excellent condition. Labor, however, did not progress. The child did not escape into the abdominal cavity, and it was delivered by version. The woman had a good pulse after delivery, and everything seemed to be in her favor. But she died within twenty-four or thirty-six hours, and at the autopsy her abdominal cavity was found filled with blood. Dr. Lusk believed that, with all the favorable conditions, if he had opened the abdomen and sutured the uterus—certainly, if it could have been sutured as it would be to-day—the woman's life would have been saved.

In the third case the accident was not recognized during life. The rupture did not extend through the peritoneum. An immense hæmatoma formed, and from this death occurred by septicæmia. In this case, had the condition been recognized early enough, removal of the cloths and introduction of a bent drainage-tube might possibly have saved the life of the patient.

He did not think that there was a great deal of relevancy in discussing the question of laparotomy when the child had partially escaped from the uterus. For the one thing which it was desirable to avoid was enlarging the rent in the uterine wall, and additional rupture would almost certainly occur in attempts to effect delivery by the vagina. Under such circumstances, then, it was preferable to make the abdominal section. Even if only a part of the child had escaped, and it could be readily delivered and the mother was in good condition, he should feel better after he had made the abdominal section and closed the rent in the uterus than he would to leave it practically to nature. Still, there were eight or ten cases on record which sustained the view set forth by Dr. McLean. These had occurred since the advent of Felsenreich's bent drainage-tube.

Dr. H. T. Hanks thought that when one fact was considered in Dr. McLean's case, it would not seem so surprising that the woman recovered, and that fact should always be before us, namely, that the rent in the uterus *closed quickly after the child was delivered.* The uterus was not prevented from contracting. But had it been like a case in his own experience, where there was no contraction of the rent about his hand, he would not expect that the woman would get well.

Given a ruptured uterus, the child in the abdominal cavity, the membranes ruptured, the rent so large that the uterus would not contract fully and thoroughly, there would be great danger in allowing it to remain without operative interference. But if the rent was low down and the fœtus dissected for itself a cavity, as it were, by pushing up the peritoneum, the probabilities were that the woman might recover.

In the great majority of cases of rupture of the uterus the woman will die if treated in the old way. Hence if the rent was large and the child was in the abdominal cavity, he would perform abdominal section and suture the uterus, or, if necessary, perform Porro's operation.

Dr. E. H. Grandin said he had thought that, should he meet with a case of rupture of the uterus, he would do just what Dr. McLean did, and try to deliver by the natural passages, and, if he did not succeed, he would, in accordance with the teachings of those who have had experience, resort at once to laparotomy, as he would in the presence of symptoms suggesting abdominal hemorrhage. He could not help thinking, however, that Dr. McLean's success in his case was exceptional. If the uterine suture could not be used, he would perform Porro's operation.

Dr. Boldt had had one fatal case of rupture of the uterus. He favored laparotomy when the rent was large or was high up, provided the woman was not suffering from shock.

The Chairman had seen two cases, in both of which laparotomy was performed, and both terminated fatally. The operations were performed under reasonably favorable circumstances, although there was considerable shock and evidence of extensive hemorrhage. One woman lived three days, and died of peritonitis; the other lived more than twenty-four hours, and died of shock. Dr. McLean had brought out an important point when he spoke of too prolonged use of the forceps. He regarded liquor amnii as far more irritating than blood, although, of course, it was not desirable to have blood enter the peritoneal cavity. It did not seem to him that the condition of shock need be considered very much as a contra-indication to laparotomy, for laparotomy could not add very much to it in most cases.

Dr. McLean had been very much interested in the discussion, particularly as it had appeared that his sentiments had not been understood fully. He had intended to use language which was so plain that it could not be misunderstood. Dr. Boldt had assumed that his paper was a protest against laparotomy, whereas he wished to protect the woman from unnecessary laparotomy and to give her its full benefit in all cases where it was required. He argued in favor of delivery through the natural passages because of the growing tendency of modern discussion to rule out of consideration all such interference. The London Obstetrical Society, composed of representative men, had given its support to the doctrine that it would be malpractice to attempt to deliver through the natural passages, even if the child was small, had not entered the peritoneal cavity at all, and the rupture was incomplete; but that laparotomy should be performed

under all circumstances, even if afterward delivery of the child was effected through the vagina.

He had simply wished to reverse the argument, and would say that, if we could, we should deliver the child by the natural passages, even if we had to perform laparotomy afterward.

There were cases in which rupture occurred before dilatation of the os had taken place, or in which there would evidently be great difficulty in effecting delivery, or the intestines were in the uterine wound, or there was evidence that liquor amnii had escaped into the peritoneal cavity, etc., and in such cases we should be ready to perform laparotomy, and, under some circumstances, Porro's operation.

But, in cases of rupture of the uterus in which the peritoneal cavity was not invaded, and in which the early operation of delivery through the natural passages could be done under thorough antiseptic precautions, he believed that this method gave fully as good opportunity for the woman to recover as did laparotomy; indeed, better. If the membranes were intact, except at the point where their original rupture was, it was evidence that the peritoneal cavity had not been invaded by anything except blood, and under those circumstances he did not believe that it was desirable to open the abdomen.

The Section then adjourned.

Correspondence.

A COUNTRY DOCTOR OF A HUNDRED YEARS AGO.

To the Editor of The Medical Record.

Sir: In the spring of 1773 Dr. Samuel White began practice in the infant town of Newbury, Vt. He was twenty-three years of age, but had devoted already six years to preparation for his life-work. He had received a common school education, some instruction in Latin, and had spent four years under the tuition of Thomas Brickett, M.D., at Haverhill, Mass. He had practised nearly two years in his native village of Plaistow, N. H., before he was influenced by friends to join them at Newbury. Only rough outlines remain of the heroic and adventurous side of his long, active, honored life. His own records suggest a little, the private journal of a contemporary tells more, and imagination can fill in many details. From Newbury to Canada, along the Connecticut River, he was for many years "the doctor," and his practice extended widely on either side. He visited in Corinth, Bath, Haverhill, Newbury, Mooretown (Bradford), Barnet, Piermont, Upper Coos, Lyman, Peacham, Ryegate, Topsham, Gunthwaite (Littleton), Landaff, Morristown, Apthorpe (Lisbon), Wentworth, Coventry, Rumney, Groton, and Riverlamoile. He travelled often, in the winter, upon snow-shoes, crossed unbridged streams, made his way through uncut forests and roadless wildernesses. He responded always to the call of the poor, and gave freely his services to those who could not pay without hardship.

He has left two worn and time-stained books[1] of three hundred and sixty manuscript pages, and ample evidence of "Liber No. 3." In these are entries from 1773 to 1790, not always chronological in arrangement, and very likely not complete for the time they include, but presenting an interesting picture of Dr. White's practice. They are written in a hand like copper-plate, and contain the record of the rides or walks the doctor took, of the drugs he exhibited, the teeth he pulled, the bloodletting he did, and of the sums he charged and collected years after, or often not at all.

The visit and each item of treatment are entered separately. For instance, after a series of visits and doses to Abial Chamberlain, who seems to have been sickly, occurs the entry:

"Sept. 10th 1784. To visit 2/ Physic 1/ Emet 1/ Bleeding 1/ Sal Nitre 1/—6."

The least charge for a visit is one shilling, and the greatest—to Upper Coos—is sixty shillings. While commonly each place had its own uniform rate for a visit, occasional great variations are noticeable, for reasons which do not appear; but the weather, the difficulty of travel, the urgency of the call, and the poverty of the patient may have been factors, as well as the custom of clubbing together of several families to pay for the doctor's visit. The variations occur frequently in the same account: To Corinth charges were all the way from one to twenty shillings; to Haverhill, two to six shillings; to Apthorpe, two, three, and twenty-seven shillings; and in Newbury, his home, one to four shillings. Medicine was usually one shilling for each potion, occasionally two shillings; bleeding was always one shilling; tooth-pulling, one shilling; dressing a wound, one shilling; lancing a sore, one shilling; setting an arm or leg, six shillings; "Attendance on your wife's Travel" was twelve shillings.

These two books show accounts of about two thousand five hundred pounds, many of which have no credit side; many of the larger accounts ran six and eight years, and then were settled by notes of hand; and, indeed, this mode of settlement seemed applicable to accounts long or short, large or small. In one case the doctor took a yoke of steers to balance an account of £5, and a watch, at another time, to close up a £6 account. From an entry of seven dollars as £2 2s., it appears that the dollar was equal to six of the twenty shillings that make a pound, or a shilling was the present New England shilling of 16⅔ cents.

In his materia medica the good doctor had a wide range. One hundred and fifty-two remedies are noted in his books. Of this number thirty-six are used but once, ten twice, and eleven three times. It was his satisfying custom to give medicine; and among the simple folk of his remote time and place, doubtless discontent would have prevailed, and the accounts would have run on for two or three years longer if, when the doctor came, nothing happened. But no charge of neglect can be based upon his records; of 4,271 visits, only 181 were unadorned by the exhibition of some drug. As he has left account of 8,471 doses, or operations, in his 4,271 visits, and as 1,630 of the doses were physic, the patients must have had every reason to be satisfied. The physic, which appears once in every five administrations of medicine, was no doubt a liver-coercing, peristalsis-stimulating mixture of potent drugs, kept in a well-known jar, from which it could, in his absence, be doled out to the regular customers by some member of his household. Next to physic he relied upon camphor, to the extent of 994 doses. Then followed 650 doses of valerian, 444 of cream tartar, 288 of balsam or cortex of Peru, 275 of myrrh, 262 of tartar emetic, 258 of rhubarb, 244 of "bitters." He gave 228 "vomits," 148 doses of antimony (crude or wine), 137 of lavender, 136 saline draughts, 116 doses of "contraery," 93 of calomel, 83 of assafœtida, and 81 of chamomile. He used, during the period of his books, guiacum, jalap, magnesia, castor, silla and sapo pills more than fifty times each; and paregoric, liquor laudani, cascarilla, gum arabic, oil of amber, elixir vitriol, elixir salutis, annis seed, gum ammoniacum, aloes, cinnamon, licorice, pectoral balsam, and sweet spirits of nitre twenty or more times each. Among his remedies were pill cochiæ, pill rufi, pill æthiops, pill cathartic, sapo pills, female pills, mercurial pills; Hooper's, Anderson's, and Locker's pills; elixirs vitriol astma, solutis, proprieta, stomatica. Less familiar than most of these are the names, as they occur in his books, of sago permeum, sp. sal c.c., ens veneris, Roman vitriol, flos bolostinos, lac ammoniac., mellilot, cinnabar, sal tartar, "contraery," sal mirabile, oculi cran-

[1] These books were examined through the kindness of Hon. A. S. Batchellor, of Littleton, N. H.

corum, spirit hierapic., flos benjamin, crocus, pickleura, calibietes, vorsena, sal cor cerebrini, winter bark, hat case. British oil, Bateman's drops, Thurlington's drops, and Hooper's pills display their ancient labels and credentials to-day.

The doctor practised venesection, it would seem, without excess. Five hundred and four bleedings he puts down, at one shilling each—about a hogshead full of blood. He attended to it, to some extent periodically, and often there occurs a series of entries of the same date; and many times appears "To bleeding two," and occasionally "To bleeding three." In the account of Mr. Thomas Homer, of Mooretown, are these entries:

April 25, 1785. Bleeding two.
May 4, 1785. Bleeding.
May 9, 1785. Bleeding.
June 9, 1785. Bleeding.
July 3, 1785. Bleeding.

A few mild doses were interspersed, and recovery perhaps took place, as pulling a tooth was charged on November 26th of the same year.

Dr. White's biographer, in the journal cited, attributes to him great skill and repute as a surgeon, but these records of his earlier practice give little indication of extended surgical work. They note the pulling of seventy-six teeth, the dressing of fifty-seven wounds, the setting of ten arms, three legs, and one "bone," and mention only seven cases of confinement. They do, however, give striking glimpses of the vigorous courses of treatment which our sturdy ancestors could undergo before either disease or patient succumbed.

Major Jothan Hayward, for instance, upon May 29, 1784, had "vomit, physic, bleeding."

Moses Moore seems to have furnished a difficult case. His treatment was: On

November 4th. Physic, calomel.
November 10th. Physic, two portions.
November 11th. Physic.
November 12th. Physic, two portions.
November 15th. Physic.
November 16th. Two dozen sapo pills.

Mrs. Colonel Robert Johnston, it appears, was confined upon October 13, 1787. For six days all went well; at any rate, neither visit nor medicine is recorded, until the exhibition, upon October 19th, of physic, saline draught, followed and continued,

October 20th, by Physic.
October 21st. Physic.
October 22d. Physic, two blister plasters.
October 23d. Physic.
October 24th. Two portions, physic.
October 25th. Camphor.
October 26th. Valerian.
October 27th. Physic.
October 28th. Physic.

The treatment ceases until November 16th, then physic.

November 17th. Physic.
November 20th. Emetic.
November 21st. Physic.
November 22d. Valerian,

and, unfortunately, now the record runs over into missing "Liber No. 3."

Abial Chamberlain had a severe illness, which began April 23d and terminated May 14, 1784. The internal evidence, the increasing frequency and sudden cessation of the visits, and the opening of an account later with the Widow Chamberlain, would lead to the conclusion that Mr. Chamberlain's illness at this time terminated in death, were it not that some five months later the physic, emetic, bleeding, and nitre were administered to one Abial Chamberlain. So, without historical information, not at hand, the result remains matter for speculation. During this period of twenty-two days Mr. Chamberlain was bled three times, took four emetics, and had two blister plasters applied; took six doses of cream of tartar, five of physic, five of wine of antimony, four of tartar emetic, two of British oil, two of camphor, one of calomel, one of Bateman's drops, and one of Thurlington's drops. The last medicine given, upon May 14th, was tartar emetic, and the visits ceased.

The good doctor's useful career continued many years, and upon February 26, 1847, he died, at the ripe age of ninety-seven.

EDWIN J. BARTLETT, M.D.

HANOVER, N. H.

ROUGH-AND-READY COUNTRY EXPERIENCES.

TO THE EDITOR OF THE MEDICAL RECORD.

SIR: I have read the experiences of several country doctors of late in THE RECORD. I would not wish to reproach my city brethren with a lack of the rough-and-tumble experience of a country doctor. I am inclined to congratulate him, rather, on his more fortunate choice in locating where tall towers cast their shadows instead of sylvan shades. We beguile many lonely hours, astride of the lagging-footed saddle-horse, with THE RECORD, our only companion—its advertising leaves in tatters, used to put up powders where even an old newspaper is not procurable.

When I entered practice it was in the hills of West Virginia. Was called with another physician to amputate an arm, patient living nine miles away. It turned out neither of us had more instruments than a small curved bistoury and a scalpel, with some needles and silk. Not to be balked (as we were much in need of the fee), we borrowed a pocket-knife of a friendly machinist, wrapped the handle with newspaper, and went on rejoicing. My friend administered an anæsthetic while I amputated, three inches below the elbow, an arm as large as an ordinary man's calf. We now discovered that we had forgotten to bring a bone-saw, which discovery had been prearranged. Called for and got a rusty hand-saw, which rattled over the bones until the sweat poured down from the face of the operator like rain. Patient made a rapid recovery, which fact alone saved us from the wrath of "regulators," who threatened us, should our patient die, with a hemp cord.

While living in a Colorado mountain-town I started, at 4 P.M., one November day, through a foot of snow, with thermometer 10° below zero. Rode forty miles on horseback, crossing the range, which was fast blocking up with snow. Reached patient at 2 A.M., too benumbed to get off my horse. Exhaustion brought on copious watery stools. Braced up on a glass of brandy and reduced dislocated shoulder. The three following days made round-about trip of one hundred and sixty miles, crossing range again. Reached home and was sick a week. Physicians who had been in the mountains years refused to go; but I was a green mountaineer, and did not know the dangers of such a trip until afterward, and the largest fee of my life was irresistible—just $100.

Here in the Southern Ohio hills I was last fall called in haste six miles. I was caught on the road in my buggy with my four-year-old boy. Hurried on for four miles through mud and cold rain. Took harness off and climbed onto my wet horse, bareback (leaving my child at a farm-house), and rode and swam up a creek-flooded road for two miles—saw the complacent face of an aged lady who "had had a pain in her side."

Rode and swam back to buggy and drove through cold wind, wet and chilled through, until near home, after dark; got stuck in a mud-hole; broke single-tree; horse ran away; dropped boy in mud-hole, head up; and ran horse into a bank. Respectfully,

L. HOWE, M.D.

WELLSTON, O.

A GERMAN MEDICAL SOCIETY has recently been organized in Philadelphia. Dr. F. H. Gross, of the German Hospital in that city, was the first chairman of the society.

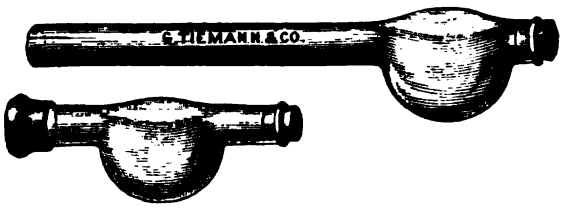
New Instruments.

A NEW ARTIFICIAL LEECH.[1]

By HENRY FLOOD, M.D.,

ELMIRA, N. Y.

I HAVE for some years been in the habit of using the leech in the treatment of many diseases, and have had considerable trouble in obtaining any which were sufficiently active. For nearly a year I have endeavored to overcome the difficulty by using artificial leeches. I first tried a glass tube, closed at one end, from which the air had been expelled by the vapor of ether, but I found that the ether hastened the coagulation of the blood and impeded its flow. There was also no way of regulating the suction-force, which would be either so light that it would not



draw blood, or so strong that it would cause pain and often injure inflamed tissues. I then used an instrument made after the plan of Heurteloup's artificial leech, which also on trial was found to be very unsatisfactory. Finally, I adopted the plan of using a glass tube attached to an aspirator. With an aspirator a suction-force sufficient to draw blood can be produced, and the instrument may then be stopped before the pressure of the tube on the tissues becomes painful. I found that a glass tube from one-half to three-quarters of an inch in diameter, attached to an aspirator, worked very well, and could be applied to almost any surface. The objection, however, was that the calibre of the aspirator tube was so small that it became easily stopped with coagulated blood, and another objection was that considerable time and patience were required to remove the dried and coagulated blood from the aspirator. I have made some leech tubes, shown in the accompanying illustration, which, after an experience with them of several months, have given satisfaction in every detail. This leech consists of a glass tube with a bulb of a capacity of one fluid ounce. The mouth of the tube is made broad enough to prevent constriction of the tissues, and is covered with a rubber band, when necessary, in order to protect the inflamed tissues from injury by the hard surface of the glass. Two sizes are made; one with a short neck, for use on external surfaces, and the other with a long neck, to be applied to the uterus, tonsils, or other surfaces in the interior of cavities. The distal end is constructed so as to fit the screw on the end of the aspirator tube. The advantages of this instrument are that it can be attached to any form of aspirator, and that the blood will soil only the leech tube, which can be readily cleaned. The opening in the tissues can be made by one or two incisions with a sharp-pointed lance, or with one of the circular scarifying instruments which are in the market. The only times that I have not drawn a satisfactory amount of blood were when the incisions were too superficial. This instrument makes artificial leeching very simple. It is cheaper than the natural leech, always ready for use, and is always sure to withdraw blood in a satisfactory manner, and in sufficient amount.

THE ROYAL COLLEGE OF PHYSICIANS OF LONDON has received a legacy, by the will of the late Dr. Gavin Milroy, of £2,000 for the endowment of a lectureship on public health and sanitation.

[1] Presented at a meeting of the Medical Society of the County of Chemung, December 21, 1886.

Army and Navy News.

Official List of Changes in the Stations and Duties of Officers serving in the Medical Department, United States Army, from March 6 to March 12, 1887.

ALDEN, C. H., Major and Surgeon. Ordered for duty at United States Military Academy, West Point, N. Y., August 28, 1887, relieving Lieutenant-Colonel Andrew K. Smith, Surgeon, who will then report by letter to the Surgeon-General. S. O. 52, A. G. O., March 5, 1887.

CARTER, WILLIAM F., Captain and Assistant Surgeon. Granted leave of absence for one month on Surgeon's Certificate of Disability. S. O. 25, Department of Texas, February 24, 1887.

MCCREERY, GEORGE, Captain and Assistant Surgeon. Leave of absence extended one month. S. O. 52, A. G. O., March 5, 1887.

JOHNSON, R. W., Captain and Assistant Surgeon. Ordered for temporary duty at United States Military Academy, West Point, N. Y. S. O. 51, A. G. O., March 4, 1887.

EDIE, GUY L., First Lieutenant and Assistant Surgeon. Granted leave of absence for one month, to take effect about March 1, 1887. S. O. 27, Department of Texas, February 28, 1887.

Official List of Changes in the Medical Corps of the United States Navy for the week ending March 12, 1887.

BRADLEY, GEORGE P., Surgeon. Detached from Naval Hospital, Philadelphia, Pa., and granted six months' leave.

STEELE, JOHN W., Passed Assistant Surgeon. Ordered to Naval Hospital, Philadelphia, Pa., without delay.

Medical Items.

CONTAGIOUS DISEASES—WEEKLY STATEMENT.—Report of cases and deaths from contagious diseases reported to the Sanitary Bureau, Health Department, for the week ending March 12, 1887:

	Cases.	Deaths.
Typhus fever	0	0
Typhoid fever	5	4
Scarlet fever	44	11
Cerebro-spinal meningitis	4	4
Measles	177	29
Diphtheria	108	57
Small-pox	14	1
Yellow fever	0	0

POSSIBLE DANGER FROM PEPSIN.—It is suggested by Dr. Wood (*Therapeutic Gazette*) that in ulcerated conditions of the bowels or stomach pepsin may enter the blood and cause septicæmia. Dr. E. Chenery reports a case which he thinks confirms this view.

PHOSPHORUS IN INTERMITTENT FEVER.—Dr. Soshinski recommends phosphorus very highly in intermittent fever. He gives five drops of the oil of phosphorus, well diluted, three times a day. He states that he has been in the habit of prescribing it for all his cases during the past five years, and has had excellent results from its use.

AGAINST PASTEUR.—Up to November 1, 1886, France gives the following hydrophobia statistics for the year: Persons dying from hydrophobia *assisted* by Pastorian treatment, 14; persons dying without the assistance of Pastorian treatment, 17; total, 31. The annual average of such deaths in France has heretofore been 27.—*Science Libre.*

WET-NURSING IN PARIS.—The following quotation from a Parisian correspondence appears in *Gaillard's Medical Journal*, and will be read with interest in view of the attention recently given to the subject in our city: "These peasant matrons have been spoiled by the upper classes, where they are indulged to an extent that defies description. They are decked out as for a feast; they rule the household, in return for which they give what the mother is apparently unwilling or unable to give, and what old-fashioned folks still persist in considering the sweetest joys of maternity. Thackeray made Becky Sharp French by the mother's side. It proved his acumen; had he done otherwise, English readers would have been inclined to tax him with exaggeration in depicting his heroine as utterly indifferent—nay, sick and tired—of her pretty son because he interfered with her enjoyment of society. In Paris, however—and in the large provincial centres, whose chief delight it seems to ape Paris—the Becky Sharps are in a majority. The statistics of last year's births for the city of Paris amount to 62,000. Out of these, 17,000 were despatched to the country. I may safely defy anyone curious in these matters to take a six hours' stroll through one or two of the best or second-best quarters of Paris, and to find more than one well-dressed mother out of every thirty unflanked by a wet-nurse. He can easily try the experiment for himself, seeing that there is a difference in the costume of the mere nurse-maid and the wet-nurse. The latter is got up very theatrically and prettily, with a wreath of beautiful ribbons round her exquisitely embroidered cap, two long streamers of the same ribbon floating in the wind, a handsome dress and ample cloak, often lined with silk, and a lace apron. She is part of the show of a fashionable entertainment in Paris. If my observer has done this, if he calculates the 17,000 infants gone to the provinces, and jots down a computation based upon the fraction of the remaining 45,000, he will arrive at the conclusion that probably about one of every ten mothers nurses her own baby."

A SOLUTION OF SALICYLATE AND IRON USED FOR RHEUMATISM in New York Hospital is made as follows:

℞. Acid. salicylic..... ʒj.
Ferri pyrophosphat ..... gr. v.
Sodii phosphat ..... gr. j.
Aquæ..... ʒ ss.
M. Sig.—One drachm every two hours.

A PLETHORA OF DOCTORS.—It would appear that this country is not alone in the overcrowding of the medical profession. Spain is suffering from the same cause, and a young physician's prospects there are about as uncertain as they are here. They seem to be wiser there, however, as it is stated that the number of medical students is decreasing at a very rapid rate, only twenty men having matriculated in the medical department of the University of Madrid in the fall of 1886.

DUHRING'S TREATISE ON DISEASES OF THE SKIN has been translated into Russian. French and Italian translations of the same work were made some time ago.

A PRACTICAL SURGICAL HINT.—Dr. John F. Lockwood, of Batavia, Ill., writes that a young man came into his office having severed the radial artery in the wrist. His brother, who accompanied him, controlled the hemorrhage from the proximal end by means of pressure while the writer occupied himself with the distal end, and endeavored to seize the bleeding points. He was unable to find these readily because of the constant oozing of blood which obscured the field of operation, and sponging was of little avail. It then occurred to him to blow away the blood, which he did, and found that by this means he could keep the wound so free that the ends of the arteries were readily found and tied. He says that with a little care there need be no spattering of blood, but that a well-directed stream of air simply clears it all away from the wound.

TREATMENT OF ERYSIPELAS.—For the treatment of erysipelas Dr. Archangelski has tried a number of applications, and finds that their comparative efficiency is represented by arranging them in the following order: (1) benzoic acid; (2) tincture of iodine and turpentine, as ointment; (3) sulphate of copper; (4) sulphate of iron; (5) oxide of zinc; (6) naphthalin; (7) solution of perchloride of mercury, 1 to 300; (8) chloride of zinc; (9) iodoform.

BICARBONATE OF SODA IN TONSILLITIS.—The treatment of tonsillitis by frequent local applications of carbonate of soda, which has been practised and recommended by Dr. D. Juan Giné, has been put to a series of tests by another Spanish physician, Dr. D. Rovira y Oliver, who deduces from them the opinion that, though it is often beneficial in cases where the parenchyma of the tonsil is affected, it is of much less value than many other applications in cases which are merely superficial and catarrhal.

A GOOD DENTIFRICE.—Precipitated chalk forms the best basis for a tooth-powder, to the base of which may be added pulv. saponis and ol. eucalypt., a drachm of each; and, if there is no objection to the taste, half a drachm of carbolic acid.—*The Lancet.*

MEASURE OF A MAN.—Broca formulates the rule that the body should weigh as many kilogrammes as it measures in centimetres, after deduction of the first metre, *e.g.*, a man who measures one metre, eighty centimetres —180 ctm.—should weigh eighty kilos. If he weigh more or less, he is too stout or thin. As man increases in years he decreases in weight, and there is a compensating decrease in height.

CURIOUS ACTION OF REMEDIES AT A DISTANCE.—M. Jules Voisin has made two highly interesting experiments, at the Salpêtrière Hospital, on hysterical patients on whom he studied the action of telepathic remedies (*médicaments à distance*), such as metals and the magnet. He explained the phenomenon of various changes of personality presented by one of his patients, M. V——, the same individual who was experimented on by MM. Bourru and Butot (see Congress of Grenoble, 1885, and Société de Biologie, 1885). M. Voisin's experiments were made with corked and sealed phials of an opaque color. He was himself ignorant of the contents of these phials, and was careful not to utter a word in the patient's presence. He threw the subject into a lethargic, somnolent, and cataleptic state, but obtained no result under these conditions. When M. Voisin made his experiments on any patient in a waking state, the latter immediately fell into a hypnotic state, and exhibited symptoms of disturbance —nausea and vomiting. If the name of a drug, of which the effects are well known, or the effects of any medicament whatsoever were mentioned, during the state of hypnotism, the patient immediately manifested the physiological effects of these remedies. Suggestion and unconscious suggestion were thus manifested. In another series of experiments M. Jules Voisin observed, during one of the three phases of somnolence (lethargy, somnambulism, catalepsy), the state of one of his subjects, V——, he was not affected by the magnet. In the waking state no effect took place unless the magnet was seen by the patient, when it induced an attack, probably through suggestion. Gold and mercury caused redness and blisters if V—— was aware of their presence; these results were obtained likewise during somnambulism. By suggestion, the effect of metals was destroyed or produced without their presence, and if the contact of metal took place without the knowledge of V——, when he was awake, no effect occurred. General sensibility, sensory and motor sensibility, and the psychical state were affected by suggestion. M. Jules Voisin therefore believes it possible that the phenomenon of change of personality, as described by MM. Bourru and Butot, represents the last stage of an hysterical attack.—*British Medical Journal.*

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Original Articles.

ON BACTERIA IN ICE, AND THEIR RELATIONS TO DISEASE, WITH SPECIAL REFERENCE TO THE ICE-SUPPLY OF NEW YORK CITY.

AN EXPERIMENTAL STUDY FROM THE LABORATORY OF THE ALUMNI ASSOCIATION OF THE COLLEGE OF PHYSICIANS AND SURGEONS, NEW YORK.

BY T. MITCHELL PRUDDEN, M.D.,

DIRECTOR OF THE LABORATORY.

OUR knowledge of the dangers of impure water has become much more precise since we have learned that many common and fatal diseases are caused by tiny vegetable organisms, called bacteria, which such water may contain. As the questions relating to a pure ice-supply are for the most part identical with those relating to the water-supply, in so far as ice is used for drinking purposes, it seems necessary to look for a moment, before passing to the immediate subject of this investigation, at the new methods of water-analysis and the practical advance which their application has brought about.

It was formerly the practice, whenever the fitness of a water-supply for drinking and culinary purposes was called in question, to subject the water, when this was feasible, to a careful chemical examination, and a vast amount of learning and technical skill has been expended in arriving at accurate methods of analysis. But the great difficulty with the simple chemical analysis of water has always been to know exactly what significance to attach to its results. The presence of a considerable amount of organic matter in water, particularly if this could be shown to be of animal origin, has been regarded as a sufficient evidence of its unfitness for drinking purposes. Not because organic matter is in itself unwholesome, but because in the forms of water-contamination it usually signifies decay, putrefaction, or the presence of animal excretion.

More recently, since certain diseases as well as all putrefactions have been shown to be caused by bacteria, the presence of organic matter in drinking-water has been looked upon as indicative of the presence or of the action of these organisms, and in this way furnishes a criterion of the probable salubrity of the water. But chemical examination can determine only inferentially the presence of bacteria. The new methods of research, however, by which it has been shown that certain diseases, such as consumption, typhoid fever, and cholera, are caused by the presence and action in the body of certain species of bacteria, are directly applicable to the analysis of water. Thus it is no longer necessary to *infer* the presence of bacteria in a given sample of drinking-water from its organic contents, but the bacteria may be actually seen, counted, and their species and actions on the animal body definitely determined. The new method of water-analysis, by which its living bacterial contaminations are determined and studied, is called the *biological analysis*.

It should not be inferred that the biological has superseded the chemical method of water-analysis, but, so far as we can at present judge, it forms a very important addition to it. Indeed, it may be said that, so far as our knowledge of a certain class of bacterial diseases, such as typhoid fever and cholera, is concerned, the biological analysis is the more important; but that this is true in all cases it would certainly be premature to say. For it is already known that in some cases the results of chemical and biological analysis do not coincide. A chemical analysis may, for example, show so large a degree of organic contamination as to render utterly unfit for potable purposes water which at the moment contains comparatively few bacteria. So that it would seem that, in many cases at least, the two methods, mutally supplementary, should go hand in hand.

There are, of course, many cases in which a careful scientific analysis of water is entirely superfluous. When the water is bad-smelling, or when it is obvious that it is mixed with animal excreta, even though it should look clear and colorless, an ordinary common-sense of decency and cleanliness, to say nothing of the danger of incurring disease, should lead to its avoidance for drinking purposes, without some efficient purification. This seems obvious enough; and yet a very little attention to the matter will reveal to the observer instances, sometimes on a large scale, of almost incredible filthiness and foolhardiness in the use of evidently impure water by families and communities which fancy that they are civilized.

A direct microscopical examination of water for the presence of bacteria is impracticable, first, because the individual organisms are so exceedingly minute that it would be almost impossible to examine completely any considerable quantity of water; and, second, because in this way, even if the bacteria could be all seen and counted, we should be unable to determine which of them were living, and as it is only living bacteria which are capable of inducing disease it is these alone which are of sanitary importance.

The new methods of biological analysis of water are very simple in principle, but require for their execution considerable patience, care, and experience.

The biological method is briefly as follows: In the first place, all the vessels and instruments which will come in contact with our water and the food which we prepare for the nourishment of the bacteria are completely freed from all living germs, which are almost omnipresent in the air and on the things we touch. This is usually done by prolonged heating or steaming. Thus freed from all living things, no matter how small, our materials are said to be *sterilized*. The food which we prepare for the bacteria in water-analysis is usually beef-tea, with a little pepton and common salt and enough gelatin to make it moderately solid when cold. This is called the nutrient gelatin, or culture-medium, and it is poured into glass test-tubes, a few teaspoonfuls in each.

In this medium most of the bacteria which are commonly found in water will readily grow. It is clear and transparent and usually slightly yellowish in color.

Now, one of the prominent characteristics of these lowly organisms, the bacteria, is their capacity, under favorable conditions of nutriment and temperature, of rapid and enormous increase in numbers. This occurs by the slight enlargement of the individual bacteria and their division across the middle into two. These two then each again divide, and so on until within a short time an almost innumerable number of new individuals are produced from the original germ, each one the exact counterpart of its ancestors. It is estimated that, if the conditions are favorable, a single bacterium by this process of growth and subdivision may give rise to more than six-

teen and a half millions of similar organisms within twenty-four hours. But so minute are most of these that at an average estimate the whole of these sixteen and a half millions would occupy a space less than the sixteen-hundredth of a cubic inch.

When a water-analysis is to be made, the nutrient gelatin in one of the tubes is melted by gentle heat, and thoroughly mixed by shaking with a measured quantity of the water to be examined. In this way the bacteria contained in the water, always an unknown quantity and of course quite invisible, are evenly distributed through the gelatin. To insure accuracy, duplicate analyses are always made. The quantity of water used is usually one cubic centimetre, and this is taken as the standard quantity in which the bacterial content is expressed.

It should be remembered, in studying the results of the analyses which are to follow, that one cubic centimetre (1 c.c.) of water is a little less than one-third of a teaspoonful.

The portion of gelatin mixed with the measured quantity of water is now poured out onto a sterilized glass plate, and is spread upon it in a thin, even layer. The plate while this is being done rests upon a level surface kept cool by ice, so that the gelatin soon solidifies. The plate with its gelatin-layer is now put into a clean glass saucer, covered so as to be free from dust, and set away in a moderately warm place.

Now, the single bacteria which are evenly distributed through the gelatin commence to grow, but as they are each inclosed by a solid wall of the nutrient gelatin they grow in a little heap or mass, which is called a "colony." In the course of from two to four days these colonies, each now containing thousands of individual bacteria, have become large enough to be readily visible to the naked eye, or with the aid of a low-power magnifying-glass. We have now only to count these colonies and we know exactly how many living bacteria were present in the one cubic centimetre of water used for analysis, because each visible colony is the result of the growth on the spot of a single invisible bacterium which was caught here by the solidifying gelatin. Of course, if two or more bacteria chance to have clung together when the water was mixed with the nutrient gelatin, our estimate of the number of original germs will be too low, but if the mixture was carefully made this so seldom occurs that the experimental error is slight.

To facilitate the counting of the colonies, a glass plate ruled off into equal squares is usually placed over the gelatin-film, so as not to touch it; and thus, if we do not count all the colonies, we can count those found under several of the squares, and then, by multiplying the average number under the squares which are counted by the whole number of squares, we find the number of colonies, which is the same as the number of living bacteria in the volume of water analyzed.

If we wish to study these bacteria further, which is sometimes of the utmost importance, so as to identify their species, study their effects on animals, and find out whether or not they are disease-producing or pathogenic, we put the glass plate under the microscope, and with a fine, sterilized platinum wire set in a glass handle we take out a minute portion from one of the colonies and put it into a fresh tube of nutrient gelatin, where it will grow until a sufficient quantity of the material is produced for experimentation. Thus, no matter how many different species of bacteria were growing side by side on the gelatin-plate, we can take out under the microscope a little of each by itself and transfer to separate tubes, and thus get what are called "pure cultures" of all the separate species.

It is always a matter of surprise to one unaccustomed to such an exceedingly delicate mode of water-testing to find what large and varying numbers of these living organisms ordinary water may contain. We usually congratulate ourselves that in New York we have an especially excellent and pure water-supply, and this is in a certain sense true. But a series of thirty-two analyses of the Croton water, as it is delivered through one of the faucets at the College of Physicians and Surgeons on different days during October, November, and December, 1886, and January and February, 1887, shows the lowest number of living bacteria to be 57 to the cubic centimetre; the highest, 1,950; while the average in the thirty-two analyses is 243.

Now, when the first accurate biological analyses of water were made, and the very large numbers of living bacteria which it often contains were noted, it was thought, since certain diseases, and particularly typhoid fever, had been frequently shown to be associated with bad and sewage-contaminated drinking-water; and, furthermore, as typhoid fever and several other diseases were known to be caused by bacteria, that any water which was proved to contain a considerable number of living bacteria was unfit for drinking purposes.

But as our knowledge on this subject has gone on increasing, we have learned that this view must be very materially modified. Bacteria are almost everywhere present, sometimes in enormous numbers, in soil, air, and in parts of the human and animal body which are directly or indirectly in communication with the air or with foods introduced from without. By far the larger proportion of bacteria are, so far as we know, perfectly harmless. Their rôle in nature is to tear down organized bodies into their simpler constituents, a small part of these being used for their own nutrition and growth while the larger part is given up to other organisms for their life purposes. The bacteria are thus indispensable and omnipresent factors in the working out of the organic processes of nature. It still remains true, however, that a certain number of species, which can live in water as well as elsewhere, can and do produce deadly diseases, and are responsible for some of the most frightful epidemics.

Recent researches[1] have shown that there are certain species of bacteria which find in water of the purest kind, even in distilled water, when once they get a footing there, most favorable conditions for their growth and proliferation, so that it is always necessary to make an analysis of water immediately after its collection, lest we should get as the result of analysis, not the number of bacteria originally in the water, but this number plus those which have grown since it was taken from its source.

Thus Cramer,[2] in Zurich, found that the bacteria in the city water increased in number two thousand seven hundred times in a few days. Leone[3] found that Munich water, containing, when freshly drawn, only five living bacteria per cubic centimetre, after standing for five days held more than half a million. This fact has been confirmed by numerous observers.

These bacteria, which can proliferate in water to an almost incredible extent, and which may be called, *par excellence*, "water-bacteria," are not, so far as is at present known, capable of producing disease in man; but, on the other hand, they have not for the most part been sufficiently studied, so that we can safely assume that they are harmless if taken into the body in large numbers.

Furthermore, some of the bacteria which are known to be the cause of disease in man can grow and increase in number in water, and particularly, as Frankland[4] has shown, in sewer-water, which contains a considerable quantity of organic material which may serve as food.

It is of great importance to know whether the source from which the water to be examined is taken is stagnant, or whether water is running away from it and a fresh supply is flowing in or filtering in through the soil. This is particularly important in wells and lakes; for it is found that a well which has been undisturbed for a time may contain a vastly greater number of bacteria than after a vigorous pumping from it. In a flowing stream, to which a large quantity of pure fresh

water is constantly being supplied, this increase of water-bacteria from stagnation is not so important a factor.

Thus it will be seen that the biological analysis of water, important and precise as it is, and apparently leading us directly to the source of many outbreaks of infectious disease, is, after all, beset with many difficulties as soon as we come to the exact interpretation of its results.

At present, the simple statement that a given sample of water contains a large number of living bacteria affords little more just ground for its absolute condemnation than we should have for saying that all flowering plants are unfit for food because a certain number of them are powerful poisons. When we have before us the numerical results of the biological examination of a given water, the real problem still lies in determining what significance should be attached to them. To solve this we must carefully weigh all the general considerations and facts set forth above. We must find out whether a considerable proportion of the bacteria in the sample are or are not the, at least relatively, harmless water-bacteria which may have grown there; whether the water has been stagnant, or other conditions have existed favoring their increase. We must, above all, find out, if possible, whether there has been a chance for the pollution of the water with sewage or excrementitious matter of any kind. If this be the case, and large numbers of bacteria, not the relatively harmless water-bacteria, be present, we may justly infer that the natural processes of water-purification have not been acting or efficacious, but that the conditions have been favorable for the prolonged existence of the sewage-bacteria, and, among these, of disease-producing forms.

A great variety in the species of bacteria present in a water is rather indicative of sewage-contamination.

Finally, bearing in mind that even very pure spring-, river-, lake-, and well-water may, and frequently does, contain considerable numbers of bacteria, and also that our present knowledge of the disease-producing powers or harmlessness of these ordinary bacteria when taken in large quantities is still very meagre, it seems safe to say in general, for the sake of having some sort of temporary standard until increased knowledge shall give us a more exact one, that any water which contains more than fifty to one hundred living bacteria to the cubic centimetre should not be used without some kind of purification, such as boiling, filtering, etc.

Of course, this number is fixed upon somewhat arbitrarily, and with the sole intention of indicating in a general way what from a bacteriological standpoint may be regarded as a safe rule. Fraenkel, who writes with the approval of Dr. Koch, assumes that good drinking-water should not contain, at most, more than fifty living bacteria to the cubic centimetre. It should always be remembered that absolutely pure water contains no bacteria at all; that which has just been said applies only to apparently pure water. If water is known to be either immediately or remotely polluted with sewage or human or animal excreta, it should under no circumstances be used for drinking purposes without filtration, or some other efficient form of purification, whatever the number of bacteria which it may contain. In any case in which sewage-contamination could be positively excluded from the position and surroundings of the source of the water, so far as our present knowledge goes, the limit of safety might be placed considerably higher.

It is very well known that, by a suitable system of filtration, water which contains so large a number of bacteria as to be entirely unfit for potable purposes may be rendered entirely wholesome; and one of the great practical advantages of the biological and chemical analysis of water consists, not only in the power which it gives us to determine whether or not a given water is fit for use, but also, if filtration is called for, we are thereby enabled to determine positively whether or not the chosen method and practice of filtration is really efficacious.

The so-called spontaneous purification of water by sedimentation or exposure to air will be considered below in so far as it concerns our present theme.

All of the above data concerning bacterial water-contaminations and water-analyses apply equally to the problems which ice-impurities present, to which we now turn.

The biological analysis of ice is conducted in precisely the same way as the biological analysis of water, except that the piece of ice to be examined must first be carefully cleansed and then melted. The details of the ice-analyses made by the writer, are as follows: A number of small glass beakers, one for each specimen of ice, were carefully sterilized by heat. A piece of ice about one inch in cube was cracked from the sample lump, and put into one of the sterilized beakers, where it was repeatedly rinsed with boiled distilled water, which by analysis was found to contain no living bacteria. The last rinsing-water was finally drained off, and the beaker set into a hot-water bath until a small portion of the ice was melted; the remaining ice was rinsed with this melted portion, which was then poured off. This operation of rinsing in its own meltings was repeated. It may be safely assumed that in this way the remaining small fragment of ice was entirely freed from any external contamination. Now enough of this for analysis was allowed to melt, and immediately a measured quantity of the water, either one cubic centimetre or one-half this quantity, was mixed with the nutrient gelatin and plate-cultures were made as described above. Duplicate analyses of either of the above quantities were made for the purpose of control; the smaller quantity was used only when there was reason to suspect that the ice contained many bacteria, as in this case the counting of colonies in a larger dilution is more readily and accurately done. In every case the water from the melted ice was used within five minutes of its melting, so as to preclude the possibility of an increase in the number of bacteria, as mentioned above.

It should be stated here that samples of ice which contained evident gross impurities, such as grass, straw, particles of sand, leaves, etc., were in all cases rejected as not fairly representative for analysis. Such ice is ordinarily carefully excluded from the harvest by the more responsible companies, but sometimes, particularly when the crop is short, as was the case during the last winter, does not infrequently find its way to the doors of consumers.

It is a popular belief that water in freezing purifies itself, so that water which would be unpalatable and seem unfit for drinking purposes may be regarded as quite pure when frozen. This belief is to a certain extent true, or, rather, rests upon a basis of truth; for, as is well known, coarser foreign particles may be to a certain extent thrown out in the act of freezing, and the same is true in more marked degree of certain inorganic salts, coloring materials, etc., held in solution. The beautiful clearness and sparkle of well-formed ice tends to confirm the belief that the act of freezing is a very perfect purifying agency. It has, however, been shown that, so far as organic matter in solution is concerned, freezing by no means entirely purifies the water.

As is well known, the vitality of quite highly organized beings, such as toads, frogs, worms, etc., is said to be not infrequently retained during a prolonged enclosure in ice, and stories of a more or less sensational nature concerning the discovery of such beings in ice are common enough in the newspapers. But these are exceptional cases, interesting only as facts in biology, and have no practical bearing whatever upon the purity of ice in general.

In regard to the bacteria, it should be remembered that they are so exceeding minute that they may exist in water in enormous numbers without in the slightest degree impairing its clearness and transparency. Thus a series of experiments on the typhoid-fever bacteria by

the writer showed that more than one and a half million of these organisms may be diffused through a tablespoonful of perfectly clear distilled water without in the least appreciable degree impairing its transparency as it is held to the light in a thin-walled glass tube half an inch in diameter. By passing a beam of light from a lens through the tube the faintest opalescence was detected.

The literature on the subject of the effect of cold on bacteria is not extensive, especially by the use of the modern methods. These enable us not only to tell whether or not all of the bacteria exposed to cold are destroyed—which was about all the older methods could do[5]—but they enable us to tell just how many are killed by a given exposure, and what species are most vulnerable, either in a mixture or in pure cultures.

It was shown by Cohn,[6] more than a decade ago, that certain bacteria were capable of retaining their vitality after an exposure of several hours to a very low temperature, in one case to 0° F., and similar observations have been repeatedly made.

Pengra,[7] in 1884, apparently by the method of simple microscopical examination, concluded that as regards bacteria in water there may be a purification of about ninety per cent., but his method of working would suggest the possibility that a part, at least, of this purification might, in his experiments, be due to the simple sedimentation of the bacteria before or during the freezing.

In a recent report to the State Board of Health of New York, on the purity of ice from several sources, by James T. Gardiner,[8] experiments made by Hailes at his request showed that ice may contain considerable numbers of living bacteria. This general observation has been repeatedly made.

The first complete and accurate series of biological analyses of ice were made in Berlin, Germany, less than a year ago, by Fraenkel.[9] His experiments show that while the number of living bacteria contained in a given sample of water is often greatly reduced by freezing, sometimes as much as ninety per cent. in three or four days, yet that the resulting ice may still retain large numbers when the water is greatly contaminated with them.

Experiments showing the Effect of Freezing on Separate Species of Bacteria.—In order to find out exactly what the effect of freezing is on isolated species of bacteria suspended in water, a series of laboratory experiments was carried out by the writer as follows: A large number of test-tubes were plugged at the mouth with cotton and thoroughly sterilized. These were divided into sets, and into each tube of the different sets was put about five cubic centimetres of sterilized water which had been mixed with a small quantity of a pure culture of some well-defined species of bacteria. Before these mixtures were put into the tubes the number of bacteria contained in one cubic centimetre of the water was determined by the usual method of water-analysis. Duplicate analyses were made, to insure accuracy. Into each set of tubes a different species of bacteria was introduced. In this way we have in each set of tubes water contaminated with one species only of bacteria, and the number of these in each cubic centimetre definitely known. These tubes were now put into a refrigerator, the temperature of which was kept by ice and salt at from 14° to 30° F. The water in the tubes was usually frozen solid in a short time. The refrigerator was kept at this temperature for three months, and the tubes containing the different kinds of bacteria were taken out at varying intervals, the ice in them melted, and the number of living bacteria in one cubic centimetre determined in the usual way. By comparing the number of bacteria found in one cubic centimetre of the water after the freezing with that in one cubic centimetre before freezing, we have an exact determination of the number destroyed.

More than one hundred complete analyses were made in this way, and the effect of longer or shorter freezing studied on six species of bacteria under varying conditions.

The species used were: 1. Bacillus prodigiosus. 2. A short bacillus, frequently found in the Hudson River water and occasionally in the ice, which is apparently identical with the Proteus vulgaris of Hauser. 3. A slender bacillus very common in Croton and other waters, fluidifying the gelatin in sharply circumscribed pits. 4. The micrococcus of suppuration, called Staphylococcus pyogenes aureus, which was derived from a case of pyæmia. 5. A short bacillus very common in ice from all the sources about New York, as well as in the waters from which it is obtained. This bacillus is especially characterized by producing a beautiful greenish fluorescence in the gelatin, which it does not fluidify. We may call it for our purposes the fluorescent bacillus. 6. The bacillus of typhoid fever.

Owing to its great importance, the most extended study was made upon the bacillus of typhoid fever; more than fifty analyses having been made to determine the effect of freezing upon it under varying conditions. It does not seem necessary to give the figures obtained in each case, but, except in the cases of the typhoid-fever bacteria, to simply summarize the results obtained.

Table I.—*Bacillus prodigiosus.*

Time.	Number of bacteria in 1 c.c. of water.
Before freezing	6,300
Frozen 4 days	2,970
Frozen 37 days	22
Frozen 51 days	0

In this species it will be seen that the number of living individuals is largely reduced at first, but that a small number remain alive after more than one month. Another set of experiments on this species, whose results are given in Table IX., is interesting in comparison with this.

Table II.—*Proteus vulgaris* (*Hauser*).

Time.	Number of bacteria in 1 c.c. of water.
Before freezing	8,320
Frozen 18 days	88
Frozen 51 days	0
Frozen 65 days	0

Although in this set of experiments the Proteus vulgaris was completely destroyed after at least fifty-one days' freezing, this is not invariably the case, because it occasionally develops on the plate-cultures made from Hudson River and other ice in small numbers. The significance of this we shall consider farther on.

Table III.—*Slender Fluidifying Bacillus from Croton Water.*

Time.	Number of bacteria in 1 c.c. of water.
Before freezing	800,000
Frozen 7 days	0
Frozen 18 days	0
Frozen 38 days	0
Frozen 47 days	0

This species also, while completely destroyed by the artificial freezing, is occasionally found in considerable numbers in natural ice from all sources.

Table IV.—*Staphylococcus pyogenes aureus.**

Time.	Number of bacteria in 1 c.c. of water.
Before freezing	Innumerable
Frozen 18 days	224,598
Frozen 20 days	46,486
Frozen 54 days	34,390
Frozen 66 days	49,280

The culture from which this series of experiments on Staphylococcus was made was fresh and actively growing on agar. Another similar series was prepared, but from an old and partially dried agar-culture. In this the original contained 162,000 bacteria to one cubic centimetre,

* Compare Table VIII.

which grew readily on the gelatin plates. The tubes stood in the refrigerator unfrozen over night, but froze early in the morning. When examined after being frozen five and seven days, not a single living bacterium was found.

Lübbert[10] has recently shown that all the individuals in a gelatin culture of Staphylococcus are not killed by twenty-four hours' freezing. The individuals in a four weeks old agar culture were all destroyed after twenty hours' freezing.

TABLE V.—*Fluorescent Bacillus from Hudson River Ice.*

Time.	Number of bacteria in 1 c.c. of water.
Before freezing	Innumerable.
Frozen 4 days	571,560
Frozen 11 days	520,520
Frozen 51 days	183,040
Frozen 65 days	10,978
Frozen 77 days	85,008

In this species, as will be seen, there is considerable variation in the vulnerability of the individuals, as the number destroyed by freezing does not uniformly increase as the action of the cold is prolonged. This is not surprising, however, when we reflect that, although coming from the same culture, the individuals in the culture would vary both in age and nutritive conditions and that the chances are altogether against an equal distribution in the different tubes of hardy and vulnerable individuals.

This, it will be seen, is not exterminated like the previously examined species, and its invulnerability is also shown by the great frequency with which it occurs in our New York ice.

TABLE VI.—*The Bacillus of Typhoid Fever.*

Time.	Number of bacteria in 1 c.c. of water.
Before freezing	Innumerable.
Frozen 11 days	1,019,403
Frozen 27 days	336,457
Frozen 42 days	89,796
Frozen 69 days	24,276
Frozen 77 days	72,930
Frozen 103 days	7,348

The culture from which the above series of experiments was made was actively growing on agar. As the original number was so large the percentage rate of destruction is not evident, nor does it appear what the effect of the first few days' freezing is. For these reasons another series was prepared from an active gelatin culture, which gave the following results:

TABLE VIA.—*Bacillus of Typhoid Fever.*

Time.	Number of bacteria in 1 c.c. of water.
Before freezing	378,000
Frozen 12 hours	164,780
Frozen 3 days	236,676
Frozen 5 days	21,416
Frozen 8 days	76,032

The experiments on the typhoid bacillus of Table VI. were repeated, using about the same quantity of the contaminating mixture but replacing the distilled, sterilized water with the sterilized Croton, which contains more organic matter and which, therefore, more nearly approaches the conditions of natural ice. As was to be expected, however, the results were essentially the same. With innumerable bacilli in one cubic centimetre before freezing, after being frozen solid for sixty-five days one cubic centimetre contained 26,950 living bacteria.

We thus see from the experiments on this most important species, that after prolonged freezing a considerable number of the bacteria remain alive.

Billings[11] has recently shown that all the individuals in a typhoid bacillus culture suspended in water are not killed by being frozen over night.

A series of experiments was made by sowing on gelatin plates, side by side, the bacilli of typhoid fever which had just been frozen in water and those taken from a fresh gelatin culture. These invariably showed that the growth of the frozen bacteria was at first much slower than that of the unfrozen, but when the colonies were once fairly started they went on at about an even rate of growth.

EXPERIMENTS ON THE ALTERNATE FREEZING AND THAWING OF BACTERIA SUSPENDED IN WATER.—The fact that a very considerable reduction in the number of viable individuals occurs at the first freezing, while a more gradual destruction goes on as the low temperature is maintained, is doubtless due to the killing off at once of the more feeble bacteria. Still it would be interesting to know whether the marked rate of destruction is due to this factor alone, or whether the sudden change of temperature may not have a greater effect than a simple prolongation of the unfavorable condition when once the organisms have accustomed themselves to it.

With a view of throwing light upon this point a series of experiments was executed, the results of which are shown in the following tables. A number of tubes of sterilized water were inoculated with the same number of bacteria from the same source—a fresh, actively growing gelatin culture of the typhoid bacillus. A part of these were frozen solid at once, and remained so until they were removed from the refrigerator, one by one, at varying intervals, and the number of living bacteria in each determined. The second set of tubes was treated in the same way, except that the water was repeatedly frozen and thawed before examination, the number of times this thawing was repeated varying with different tubes, as shown in the table.

TABLE VII.—*Result of Alternate Freezing and Thawing on the Typhoid Bacilli—Fresh Active Culture.*

Frozen solid and remained so.		Frozen solid, but repeatedly thawed and immediately refrozen.	
Time.	Number of bacteria in 1 c.c. of water.	Number of times thawed and refrozen.	Number of bacteria in 1 c.c. of water.
Before freezing	40,896	.....	40,896
Frozen 24 hours	29,780	3	90
Frozen 3 days	1,800	5	0
Frozen 4 days	950	6	0
Frozen 5 days	2,490	6	0

Similar experiments were made with the Staphylococcus pyogenes aureus and with the Bacillus prodigiosus, with the results shown by the following tables:

TABLE VIII.—*Result of Alternate Freezing and Thawing on the Staphylococcus pyogenes aureus—Fresh Active Culture.*

Frozen solid and remained so.		Frozen solid, but repeatedly thawed and immediately refrozen.	
Time.	Number of bacteria in 1 c.c. of water.	Number of times thawed and refrozen.	Number of bacteria in 1 c.c. of water.
Before freezing	111,782	.....	111,782
Frozen 15 minutes	52,500	.....	.....
Frozen 2 hours	21,300	.....	.....
Frozen 24 hours	22,690	1	13,495
Frozen 48 hours	6,460	3	110
Frozen 96 hours	6,155	4	0

TABLE IX.—*Result of Alternate Freezing and Thawing on the Bacillus prodigiosus—Fresh Active Culture.*

Frozen solid and remained so.		Frozen solid, but repeatedly thawed and immediately refrozen.	
Time.	Number of bacteria in 1 c.c. of water.	Number of times thawed and refrozen.	Number of bacteria in 1 c.c. of water.
Before freezing	339,516	.....	339,516
Frozen 24 hours	36,410	1	2,570
Frozen 30 hours	41,580	2	275
Frozen 48 hours	14,440	3	15
Frozen 96 hours	4,850	4	0

These experiments on the bacillus of typhoid fever, Staphylococcus pyogenes, and Bacillus prodigiosus show that the greatest destruction occurs during or shortly after the sudden reduction of temperature to the freezing point of water, and that if after this the bacteria remain in the ice a comparatively gradual destruction goes on; but that if now the bacteria be thawed out and immediately refrozen another large increment is destroyed. In this way, by repeated freezings and thawings, the bacteria may be completely destroyed in a short time.

It would seem that at the time of freezing a certain number of the bacteria are killed outright, while the vitality of the remainder is considerably reduced. Now if these bacteria with reduced vitality are placed under favorable conditions of temperature and nutrition, as in the culture-gelatin, they can grow and proliferate in the usual way, while on the other hand they have not vitality enough to resist subsequent freezings.

The conditions under which the last series of experiments on the freezing and thawing of bacteria was carried out differ from those which have preceded them in that, in order to hasten the freezing, the tubes were immersed directly in a mixture of ice and salt, which gave an average temperature of from 2° to 5° F. below zero, so that they were frozen at once. They were then placed in the refrigerator, where the temperature was just below 32° F., and kept here with those which remained solidly frozen until they were again thawed or removed for examination. The ordeal was therefore in this series of experiments much more severe than in any of the others. A comparison of the general destruction-rate of bacteria frozen at this low temperature and those frozen at a higher degree shows, as would be expected, a considerably larger destruction-ratio with the lower temperature. This may have a practical bearing, for it may well be true that Maine ice and Norwegian ice, which is largely used in England, may be much freer from living bacteria on this account.

Experiments on the Effect of Low Temperatures on Bacteria Suspended in Water when the Water does not Crystallize.—A very considerable destruction of bacteria of various species takes place if the water be placed in a very cold place, but kept just above the freezing-point. Thus, in a considerable number of experiments, a much larger number of individuals was destroyed in tubes in which the water did not freeze, although kept several degrees below the freezing-point, than in those in which it became solid. These conditions were obtained by coating the inside of a number of test-tubes with sterilized sweet-oil, and then putting into them the water containing the bacteria. These tubes, together with others prepared without the oil, were placed side by side in the refrigerator. After a few hours, the water in the larger part of the tubes whose sides had been rendered quite smooth by the coating of oil would be found unfrozen, while that in the others would be solid. This difference is obviously in accordance with a well-known physical observation, *i.e.*, that fluids crystallize more readily when in contact with rough than smooth surfaces, and that small quantities of water kept perfectly still may be carried considerably below the freezing-point without solidifying. The previous boiling of the distilled water used in these experiments, by the removal of its contained air, contributes to the avoidance of freezing at low temperatures.

As an example of these experiments, which are not given here in detail as they do not concern directly the present study, tubes were placed side by side in the refrigerator which both held water containing the staphylococcus, 111,782 to the cubic centimetre; one tube was oiled within, the other not. After eighteen hours, during which they were kept perfectly quiet at from 15° to 28° F., the water in the oiled tube was fluid, in the other solid. Analysis showed that the water which had frozen contained 81,940 living bacteria to one cubic centimetre, while that in the other tube, which had not frozen, contained 16,400 to one cubic centimetre. Even the very hardy fluorescent bacillus can be readily destroyed if the water in which it is diffused is thus reduced to a very low temperature, but kept from crystallizing.

In these experiments the tubes must be removed carefully from the cold chamber if the temperature is very low, lest they should suddenly crystallize from sudden jarring.

This difference in the destructive capacity of what may be called dry cold and moist cold is interesting in view of the similar difference which exists at the other end of the thermometric scale, between moist and dry heat.

Summary of the Effect of Low Temperatures on Pure Culture of Bacteria Suspended in Water.—The laboratory experiments thus far recorded on the action of prolonged low temperatures on various species of bacteria suspended in water and frozen show, so far at least as the species employed are concerned: 1. That a considerable number of the bacteria are, in all cases, killed by freezing. 2. That the number killed depends upon the condition of vitality of the individual at the time of freezing. If the vitality is lowered, as by the exhaustion of nutriment in the culture, drying, etc., a larger proportion will be destroyed than if the nutrient and other conditions preceding the freezing are favorable. 3. That different species differ widely in their power of retaining life at the temperature at which water freezes and below. While some species, such as Bacillus prodigiosus, Proteus vulgaris, and the fluidifying water-bacillus, are nearly completely or entirely destroyed after a comparatively short freezing; others, such as the fluorescent bacillus, the Staphylococcus pyogenes, and the typhoid bacillus are so tenacious of life that a large number of the individuals may remain capable of growth even after long periods. This is especially significant, for obvious reasons, in the case of Staphylococcus and the typhoid bacillus, which are capable of producing serious disease. 4. That the time during which the low temperature is maintained is of importance in determining the number of bacteria of any given species which will be destroyed. For, so far as the experiments have gone, it appears that after the first freezing, at which time the destruction seems to be most extensive, a more gradual death of individuals occurs as time goes on. What the limits are to this gradual destruction does not appear from these experiments, as they have been extended only to the one hundred and third day in the case of the typhoid fever organism. 5. The unequal percentage destruction which, as appears in the tables showing the action of cold on different specimens of the more resistant species, shows that in a given culture the individuals are not equally capable of resisting the effects of low temperatures. This is what would be expected when we remember that in an actively growing culture of any bacterial species the age of the individuals, as well as the conditions favorable to their nutrition, will vary widely on account of their massing together as the growth of the colony proceeds. 6. By alternate freezing and thawing bacteria are more largely destroyed than when exposed to a sustained low temperature. If a low temperature be maintained in the water, while the latter is not permitted to freeze, a greater destruction occurs than when crystallization occurs.

It should be noted here that in these experiments on the artificial freezing of the bacteria that the test is considerably more severe than that to which the bacteria are subjected under the ordinary natural conditions of river and lake waters in this latitude, because the change of temperature is more abrupt, and at times the cold more severe. It was found impossible, with the facilities at the writer's command, to maintain a uniformly low temperature, as for a time after the refrigerator was restocked with ice and salt the temperature would fall to 14° F. and gradually rise to just below the freezing-point of water.

The importance of this change of temperature will be more evident when we see the results of the next series of experiments.

EXPERIMENTS ON THE ARTIFICIAL FREEZING OF NATURAL WATERS CONTAINING BACTERIA.—While, by the above method of experimentation on single species of bacteria from pure cultures, we can obtain much more precise knowledge of the effects of freezing than in any other way, there is a good deal of practical importance in knowing about what percentage of the mixed bacteria as they occur in natural waters are destroyed in the formation of ice. Now the examination of the water from a given pond or river, and the ice formed from it in the natural way, does not, even if the water be taken in winter when the ice is forming and both are taken from the same place, give a very accurate destruction-percentage, because the water beneath is always more or less in motion, and in both water and ice there is a very unequal distribution of the bacteria. Thus we might have a sample of ice which contained either a much greater or a much smaller number of bacteria than that present at the time of collection.

Approximate accuracy may, however, be obtained by collecting, under suitable precautions, waters from various sources in winter, and, after determining from each sample the average number of bacteria, freezing the remainder, and, after analyzing the ice, comparing the results.

This the writer has done, choosing as types of water samples from: 1. A large, fairly good water-system of ponds, lakes, and larger and smaller streams—namely, from the Croton water as delivered through the pipes during November, December, January, and February of the winter of 1886–7. 2. Van Cortland Pond, a small, comparatively still, shallow pond, fed by springs and small streams. This water was collected in January, 1887, from beneath the ice near the outlet and at the upper end of the pond. 3. The Hudson River, a large tidal stream, with abundant sewage pollution. The water from this source was taken in January, 1887, from beneath the ice just off Kingston Point, which projects far out into the stream. This is not far from fifty miles below Albany, and at the time of collection the tide was ebbing. This would seem to be a fair sample of water from the lower Hudson.

All of these samples were collected by the writer in small sterilized bottles, such as are usually employed for this purpose. Immediately after collection the samples were brought to the laboratory and the examination at once begun. In the case of the Hudson River water three hours passed in the journey home, but the water in the mean time was kept cold. This is important, because the possibility of a multiplication of the bacteria in transit would seem to be excluded.

TABLE X.—*Artificial Freezing of Croton Water.*

Sample I.			Sample II.		
Number of bacteria in 1 c.c. of water before freezing.	Number of days frozen.	Number of bacteria in 1 c.c. of melted ice.	Number of bacteria in 1 c.c. of water before freezing.	Number of days frozen.	Number of bacteria in 1 c.c. of melted ice.
168	4	80	1,950	3	242
168	69	32	1,950	11	84
168	74	49	....	..	...

TABLE XI.—*Artificial Freezing of Water from Van Cortland Pond.*

Sample I.			Sample II.		
Number of bacteria in 1 c.c. of water before freezing.	Number of days frozen.	Number of bacteria in 1 c.c. of melted ice.	Number of bacteria in 1 c.c. of water before freezing.	Number of days frozen.	Number of bacteria in 1 c.c. of melted ice.
2,621	1	480	732	1	162
2,621	3	436	732	3	278
2,621	8	363	732	8	99

Sample I. was taken from the pond near the outlet. Sample II. from the upper end.

TABLE XII.—*Artificial Freezing of Water from the Hudson River off Kingston Point.*

Sample I.			Sample II.		
Number of bacteria in 1 c.c. of water before freezing.	Number of days frozen.	Number of bacteria in 1 c.c. of melted ice.	Number of bacteria in 1 c.c. of water before freezing.	Number of days frozen.	Number of bacteria in 1 c.c. of melted ice.
3,448	2	720	3,056	2	156
3,448	11	62	3,056	6	302
3,448	16	324	3,056	6	200

The numbers of bacteria killed by freezing, as will be seen, vary so much in different samples and even in different specimens of the same sample that we can arrive in this way only at very general results. This variability depends largely, as would seem from the above series of laboratory experiments, upon the varying number of different species of bacteria which any given sample contains, as well as upon the varying degrees of vulnerability of individuals of the same species. We may, however, say in general that water containing bacterial contaminations by freezing, and remaining frozen for a few days, may purify itself by the destruction of as much as ninety per cent. of the bacteria. Furthermore, the number of living bacteria is gradually reduced in the ice as time goes on, but that this reduction does not go on to extinction, for all species at least, will be seen from the analyses of natural ice which are to follow.

Having thus established experimentally a variety of facts regarding the purification of water from its bacterial contaminations by freezing, let us now turn to the natural ice which is supplied to New York City from various sources.

DESCRIPTION OF SOURCES OF THE ICE-SUPPLY OF NEW YORK CITY.—The ice which is supplied to New York City, and to a certain extent to Brooklyn and Jersey City, comes almost entirely from three sources—from the Hudson River, from a few lakes and ponds adjacent to the Hudson or near the line of some of the suburban railways, and from Maine. The Hudson River stands foremost as a source of supply, the outlying lakes and ponds furnishing in comparison but a moderate quantity, while the Maine supply is drawn upon, as a rule, only when the ice season in this region has been a poor one and the domestic stock runs low. The competition in the ice market is so sharp and the margin of profit usually so close that the increased cost of transportation from Maine and the liability to wastage in transit are sufficiently potent factors to largely shut the Maine product out of competition if plenty of ice is in storage nearer by.

The total storage-capacity of the ice-houses along the banks of the Hudson from Troy to Poughkeepsie reaches the enormous amount of more than three million tons. The storage-capacity of the houses which draw their supply from lakes and ponds near New York is about three hundred and forty thousand tons. Besides this, in good ice years a considerable quantity is frequently stacked outside the houses for use early in the season.

Let us now look more closely at the bodies of water from which the New York ice-supply is obtained, and first at the lakes and ponds.

Among these *Rockland Lake* stands foremost both in the popularity of its ice and the quantity which it furnishes. The traveller by the New York Central Railroad, looking from the car-windows across the river at Sing Sing, will usually see clustered at the foot of the cliffs a number of white, clumsy craft with slender derricks and awkward windmills set upon their decks. These are ice-barges. Just over the summit of the hill at this point lies Rockland Lake, a lovely sheet of water set in a little basin on the western slope of the hills

which thrust themselves forward into the river here and form the upper limit of the Tappan Zee.

The lake is in part shallow, but in some places has considerable depth; its shores are open, and the water is supplied almost entirely from springs which drain the hill-sides surrounding it on the north, east and south, those on the east or river side sloping abruptly down to its shore. It is a lake, the situation and general appearance of which would impress the writer with its natural fitness for a source of water- or ice-supply.

The ice is stored in large houses on its banks, and these have a capacity of about one hundred and fifty thousand tons. During the shipping season the ice is loaded into cars at the house, drawn by steam up a short incline and lowered down a longer incline on the river side of the palisade to the barges.

A little village lies in the break in the hills over which the inclined railway passes, and, unfortunately, some two-score of small dwellings with the ordinary outhouses are built on the steeply sloping hill-side which extends, only a few rods away, to the edge of the lake.

The possibility that the drainage from these dwellings may reach the lake without that thoroughness of soil-filtration which a strict attention to hygiene demands, seems worthy of consideration. The lake is used for boating in summer and for skating in winter.

Swartout Pond.—On the little brook which carries the surplus water from Rockland Lake off into the Hackensack River lies this small, shallow pond. The shores are for the most part clear and open, and the ice-house has a storage capacity of about fifteen thousand tons.

The ice gathered from these two sources is of especial value to the company controlling them, owing to their nearness to New York and the facility of transportation by rail or water during the cold months when the river above is frozen and navigation is at a standstill.

Highland Lake.—This little picturesque body of water, perched on the hill-side just below Fort Montgomery, and supplied by springs from the high, wooded hills which lie behind it, is an ideal source of ice-supply. No dwellings, barns, or other sources of contamination are near it, and the water is deep and clear.

The ice is run from the shore of the lake directly down a series of inclines into the storage houses beside the West Shore Railroad and the Hudson River, so that by the force of gravity alone the ice may be carried from the lake to the houses and thence to the cars or barges. A considerable stream runs from the lake in winter. During the months in which this investigation was in progress, ice from this source was not being delivered in New York, and hence no analyses were made of it. Like most pond and lake ice, it usually contains numerous scattered bubbles, but its source is so clean and pure that there seems every reason to rely upon its excellence.

Pond on Verplank's Point.—Here, some twelve years ago, a large swamp, through which ran a small brook draining the region toward Montrose, was converted into a shallow pond by a low dam built just at the river's edge. The water-level in this pond stands some feet above that of the Hudson River at high water, and a sluice-way, controlled by a gate, allows of the nearly complete emptying of the water. In the autumn, when, as the writer's informant graphically expresses it, "the pond has got done purging itself"—by which is meant the collection of dirty scum and a variety of dead vegetable matter on the surface after the hot weather—the water is drawn off, and the pond fills anew. A small quantity of water runs over the sluice-way in winter, and no sources of contamination were observed on the shores. The pond is called "Lake Meahaugh," and the storage-capacity of its houses is about sixty-five thousand tons.

Ice Pond or Hinkley's Pond (so-called "Croton Lake").—This shallow pond, covering a few acres, lies on the line of the Harlem Railroad, between Dykeman's and Towner's, a little more than fifty miles from New York. The pond is mainly supplied by springs from the surrounding hills, but there is a small inlet and a small outlet, which forms one of the sources of the Croton River. The banks are open and free from trees, and, with the exception of the ice company's barn, free from buildings or other obvious sources of outside contamination.

The pond was apparently at one time considerably larger than it is at present, but its lower end has become filled and is now a swamp, in which water at the level of the lake surface is standing, and out of which comes a bushy undergrowth and a considerable number of small, stunted trees. This feature is important, as the pond-water, although open and drained by a small running stream, is indirect connection with—is, in fact, a part of—a large swamp containing much stagnant water.

Van Cortland Lake.—This small lake, or, more properly speaking, pond, lies about four miles above High Bridge, on the line of the New York City & Northern Railroad, and within the limits of the new Van Cortland Park. It is not very deep, and is of a few acres in extent. The water is held in place by a small dam furnishing power for an old grist- and saw-mill, and is used for ice-cutting and skating purposes in winter, and, to a certain extent, for boating in summer. Its banks are open and apparently tolerably free from external sources of contamination.

There is a small overflow, and the water is supplied in part from springs, in part from small streams, one of which runs through a long woody swamp, which is in communication with the pond at its upper end. The ice-houses hold about seven thousand tons. While much of the ice cut here is delivered in the upper part of the city, its nearness and situation on the railroad make it available for a winter supply to dealers whose stock on the Hudson is cut off by the close of navigation, and a varying quantity is shipped to New York and other places without housing.

Tuckahoe.—The Bronx River, at the village of Tuckahoe, is dammed, to furnish a part of the power for a rubber mill located here, and the small, rather shallow pond which sets back and eastward to the Harlem Railroad, supplies ice for the houses, containing about twenty thousand tons, and for direct shipment in winter.

Ice from this source, together with that cut on Ice Pond, furnishes the so-called "Croton Lake Ice." *

The Tuckahoe Pond shares in the virtues and faults of the lower Bronx, which passes several villages above. A suitably authorized system of inspection would doubtless suggest the desirability of placing the ice company's barn at a greater distance from the shore of the pond, and the removal farther from the water's edge of three out-houses belonging to dwellings near by. It should be added, however, that the vaults of these out-houses are said to be cemented.

Lake Mahopac.—On this lake arrangements have been made for ice-harvesting, and a large house, capable of holding about thirty thousand tons, stands beside the New York City & Northern Railroad, within easy distance of the lake. The ice from this source is not, however, at present in the market, owing, as the writer is informed, to the cost of transportation to New York. Its quality was therefore not investigated.

There are also harvesting facilities at Greenwood Lake.

The Hudson River.—We now come to the great and most important source of our ice-supply—the Hudson River. We should remember at the outset that this majestic stream is, in fact, a great estuary of the sea, and that its impressiveness as a large body of water and its importance in navigation are largely due to its tidal connection. The water is brackish at times as far up the stream as Poughkeepsie, and the influence of the

* No ice is cut for the market on the reservoir lake known in the geographical sense as Croton Lake.

tide is felt by a rise of more than a foot at Albany. The fall of the river from Albany to New York is so slight that at times the current at Albany is reversed and runs northward for some hours.

The main ice-harvesting fields lie between Poughkeepsie and Troy, and their exact location within these limits is determined by a variety of conditions, such as dockage facilities, currents, widenings in the river, ownership of water-front, etc. The water must be deep enough, so that the ice will not be contaminated from the bottom by grass, sand, etc. Areas of water in which the currents are not too strong are sought after, as during mild winters the requisite thickness of ice is more certain to form where the currents are not excessive. In prolonged cold weather, however, the river freezes completely over, so that ice may be cut in the deeper channels as well as elsewhere.

The river is, at best, rather shallow for purposes of navigation in its upper portions, and large quantities of detritus, which are annually brought down the stream, cause a constant and often considerable change in the bottom, so that each spring the river must be resounded and buoyed. A glance at the map of the upper part of the region which concerns us, say from Coxsackie to Albany, or even a study from the car-windows, shows in the river a very large number of large and small, low, irregular islands scantily covered by a stunted vegetation.

These islands, a gradual formation from sedimentary deposit, indicate the shallow character of the stream, which, in this region, is virtually a long, narrow archipelago. An extensive system of dikes has been built for the purpose of deepening the navigation channel, and behind these lie large areas of comparatively still water.

Let us now look at the character of the water which the Hudson bears within the limits of the ice-harvesting region. At the upper part of this section is Troy, a city of over fifty thousand inhabitants, emptying its eight million gallons of sewage daily into the river, already charged with contributions from Cohoes and Lansingburg, to say nothing of the impurities which the Mohawk brings with it from the west. A few miles below Troy lies Albany, with over ninety thousand inhabitants, and an efficient sewage system which pours directly into the river. These are the great sources of pollution of the river water.

Hudson with over eight thousand inhabitants, Catskill with more than four thousand, and Kingston with more than eighteen thousand, add their greater or less sewage contributions within the ice-field limits, to say nothing of numerous smaller towns which drain into the river.

It would seem hardly necessary to do more than mention the fact that a city of the size of Albany empties its sewage into a stream whose waters a short distance below are used in the form of ice for drinking purposes, unfiltered, to cause a universal condemnation of the practice. It is estimated by Mr. Sweet, as quoted by Dr. Chandler in his report on the water of the Hudson River in January, 1885, that the average daily flow of the Hudson at Albany amounts to 6,677,000,000 gallons. The amount of water pumped from the river for the use of the city of Albany amounts, on the average, to 6,064,000 gallons daily. This, of course, is largely returned to the river as sewage. The Hudson River just below Albany thus consists of about 1,100 parts of rather dirty river water from Troy, and one part of Albany sewage. A series of chemical analyses by Mason, made at the request of the Board of Health of Albany, showed: "First, the influence of the addition of Troy sewage is felt in the river just below Troy; second, there is no material change for the better by the time the water reaches Albany."[12]

A slight conception of the enormous number of bacteria of various kinds which are brought into the river with the sewage may, perhaps, be gained, if we remember that Sucksdorff[13] found, by a long series of experiments on healthy men with an ordinary mixed diet, that in an average from fifteen days' experiments the number of bacteria discharged daily from the body was more than fifty-three billion. Albany, it will be remembered, has a population of ninety thousand persons.

Rosenberg[14] found that the effect of the sewage of the city of Würzburg, on the River Main, so far as the number of bacteria is concerned, was to increase the number of living bacteria more than twenty times.

But if one should require more proof of the filthy condition of the Hudson just below Albany, he has only to stand on some summer or autumn day, when the tide is at the ebb, on the shores of the Albany Basin, a walled enclosure containing some thirty acres made for the purpose of increasing the city dockage, and into which fifteen sewers empty, carrying the waste of over thirty thousand people. Under these circumstances the observer will certainly be rewarded with both ocular and olfactory evidence of a most convincing nature.

Still, a certain proportion of New Yorkers have gone on amiably consuming their distant neighbors' filth under the impression, when it was thought of at all, that water purifies itself from its contaminations in freezing. That it does so, so far as its most important ingredients, the bacteria, are concerned, in but a partial degree the investigations above recorded and those about to be set down abundantly show.

And yet, within sight of the walls of the Albany Basin, down the stream, stands one of the houses, with its sewage-laden ice-field, in which this delectable harvest is stored for the comfort of a considerable number of New Yorkers. It was from this region that the ice which was actually being distributed in an outlying district of this city was taken, which, as will be seen below, contained from twenty thousand to fifty thousand living bacteria to one cubic centimetre—that is, to about one-third of a teaspoonful. It is interesting to note that arrangements are made for storage at this point of about twenty-five thousand tons of this ice, and some of it is beautifully transparent.

The first large house stands about four miles below Albany, and below this, in rapidly increasing numbers and capacity, the ice-houses are scattered along the river, always in the vicinity of the water on which their ice is cut. It is only justice to the reputable ice-harvesters and dealers to say that, so far as the writer is aware, they entirely condemn the practice of ice-harvesting in the immediate vicinity of Albany.

If we make an approximate estimate of the amounts of ice for which storage-capacity exists within six-mile reaches below Albany, we find that within the first six miles there is cut and stored in favorable seasons at least 215,000 tons; within the second six miles, 519,000 tons; within the third 328,000 tons; within the fourth, 382,000 tons; within the fifth, 438,000 tons; within the sixth, 71,000 tons; within the seventh, 254,000 tons; within the eighth, 318,000 tons; within the ninth, 198,000 tons; within the tenth, 95,000 tons. That is, about two-thirds of the ice is cut within thirty miles of Albany, and nearly one-fourth is cut within twelve miles.

Spontaneous Purification of the Hudson River Water.—A good deal has been said, and some of it in a very indefinite way, about the capacity of rapidly flowing streams to purify themselves from sewage contamination, particularly if the quantity of freshly added pure water is large in proportion to the amount of contamination, and there is no doubt whatsoever that a great deal is thus accomplished if the conditions be favorable. But it should be borne in mind that the experience which has been gathered during many years of painstaking investigation on the subject of water impurities and spontaneous purification by oxidation, etc., has been largely based on the results of chemical analysis and the deductions for the most part drawn from it alone. The ammonia and the nitrates and nitrites, which, to the chemical analyst are the exponents of the water's impurities, are simply the products engendered by the life-processes of bac-

teria, which are, in the majority of cases, themselves present, though undetected in the water analyzed. Now, nothing is more definitely established than that water can and does free itself under favoring conditions, such as exposure to air in running streams, etc., from these organic impurities. That the same conditions destroy the bacteria, which are, after all, so far as we know, the more important active agents in the diseases produced by bad water, has not yet been demonstrated in a sufficiently comprehensive way.

But the conditions in the upper Hudson are peculiar. A river of considerable size, receiving a rather dirty tributary in the Mohawk, reaches Albany contaminated with sewage from Troy. To this comes the sewage of Albany with its ninety thousand souls. That this river, large as it is, must be filthy here would seem hardly to need the demonstrations of science to make clear. In its first twelve miles below Albany it flows through a great, long, narrow archipelago, lies more or less stagnant behind the islands and dikes, and is inet, the sewage still pouring in above, and its current reversed by each incoming tide. Below New Baltimore the river channel is more open, but the retarding influence of the tides is still more marked.

Moreover, the sewer-laden water of the upper Hudson, as soon as the ice commences to form, is covered above from contact with the air, and is virtually in the condition of a great closed conduit.

On the other hand, it should not be forgotten that in the comparatively still water behind the islands and dikes there is given tolerable facility for sedimentation of the bacteria, by which means, as experiment shows, a considerable proportion of bacteria may be removed from the upper strata of the water.

The marked effect of the subsiding reservoirs in use in England and elsewhere in freeing the water from various impurities is noteworthy here. Numerous experiments have shown that when water containing bacteria is placed in vessels which are kept quite still the bacteria may settle toward the bottom so completely as to free the upper strata even to the extent of over ninety per cent.[1]

It is these latter considerations which warn us against an unqualified condemnation of the Hudson River water for ice purposes, since only a careful series of experiments can show at what distance below the source of pollution the water may have so far freed itself from bacteria, if it do so to any considerable degree, as to render it fit for ice-harvesting purposes. In the mean time we must have recourse to biological analysis of the ice itself and see to what extent bacterial contaminations actually exist in the ice harvested in various parts of the river.*

NATURAL ICE EXAMINED—SOURCES, APPEARANCE, MODE OF FORMATION, ETC.—It was necessary for the purposes which the writer had in view in the prosecution of these studies to know with certainty exactly where the sample of ice to be examined came from, and it became evident at the very commencement of the work that to obtain samples from the wagons which deliver ice through the streets would lead to very uncertain results. These ice-wagons are mostly loaded either from barges on the water-front or from the cars, or from platforms at these places.

Each day's supply may come from more than one source, and these may be entirely unknown to the drivers, who are, moreover, apt to be somewhat reticent as to the exact source of their ice, and not infrequently positively deceptive in the accounts which they give of its origin, at least to the inquiring scientist. The names on the wagons are, furthermore, not altogether to be relied upon, as a rule, as indicative of the exact source of supply, since there is a good deal of speculation in ice and exchange of proprietorship before the product comes to the market. Then, too, a not inconsiderable degree of fancy is exercised in the choice of the name which, in some cases in large letters on the sides of the ice-wagons, would naturally indicate to the consumer the source of his supply, but is, in fact, in many cases entirely misleading. For these reasons the ice for the present studies was in all cases obtained either directly from the barges or canal-boats or cars, the exact source of whose cargoes could be accurately ascertained, or from certain houses the origin of whose ice was known by the writer, or was obtained on the spot of its harvesting by the writer or his emissaries.

Let us now see what the biological analysis of our New York ice shows. I have made over 270 complete analyses of samples taken from different blocks of ice at different times, so as to insure a fair sampling of the product. These specimens were mostly from 1886 ice, but a considerable number were from the 1887 harvest. Their sources were as follows: 153 from the Hudson River, at various points from West Park to the vicinity of Troy, embracing samples from all the more prominent fields and many of the smaller ones; 22 from Rockland Lake; 23 from Swartout Pond; 51 from ice-pond, so-called "Croton Lake;" 5 from Maine; 6 from Verplank's Point; 8 from Tuckahoe; 9 from Van Cortland. Besides these were a number of other samples from these and various other sources, examined for special purposes and not tabulated here.

Now, taking the results of all these analyses of ice from the various sources, we find that the average number of living bacteria contained in one cubic centimetre of the melted ice is 2,033. Or, to express the estimate in more common terms, an ordinary drinking-glass containing half a pint of the melted average ice would harbor about half a million living bacteria of various kinds. He who, impressed with the importance of a pure drinking-water, should perfectly filter half a glass of average winter Croton water, and then add to it an equal quantity of the average ice, would have the satisfaction of replacing the bacteria removed with more than eight times as many from much more uncertain and questionable sources.

But a simple statement of these aggregate numbers, true though they be, gives a very imperfect and, it may be added, a very misleading conception of the real significance of affairs. Such general statements are misleading, if made without further qualification: First, because they do not indicate what proportion, if any, of the bacteria are probably harmful; second, because ice from various sources may contain differing quantities of bacteria; and, finally, because, as will presently be shown, the different parts of the blocks of ice as they come to the market may present very great and important differences in the number of bacteria which they contain. We have, therefore, to examine more in detail the result of the ice-analyses, and we will look first at the distribution of the bacteria in the blocks of ice.

(To be continued.)

*The writer has been particular in obtaining the facts about the Hudson River and other sources of ice-supply here described at first hand whenever this was possible, and for this purpose has seen, and in most cases carefully inspected, nearly all the important ice-houses and ice-fields on the river and lakes and ponds from which New York ice is derived. He wishes to express his indebtedness for many interesting facts about the Hudson River, its currents, dikes, shoals, etc., to Captain Jacob Schermerhorn, who for many years has buoyed the channels in the river in the Government service, and who accompanied him in the inspection of a portion of the upper Hudson.

BRONZE STATUE TO A PHYSICIAN.—Italy, more than any other European country, is lavish of honors to her great physicians and surgeons. Francesco Puccinotti, the classic historian of medicine, the translator of Aretæus, the acutest intellect ever applied in Italy to medical jurisprudence, author of memorable treatises on epidemics peculiar to the nineteenth century, and in all respects exemplary as a citizen, is about to receive in the Santa Croce of Florence (the Walhalla of distinguished Italians) the tribute of a monument in bronze. Urbino, his native town, heads the subscription-list with 1,000 lire (£40), and the Universities of Pisa and Macerata, with the Institute of Higher Studies in Florence, are combining to augment it by their own contributions and those of other seats of learning.—*Lancet.*

THE MAMMARY GLAND.

By E. F. BRUSH, M.D.,

MOUNT VERNON, N. Y.

WHEN I was at college, one of the professors told the class the following story, to illustrate the astuteness of Professor William A. Hammond: A young man lost one of his toes by a railroad accident and sued the company for damages. Professor Hammond was employed by the railroad company, and gave it as his opinion that the loss of one toe did not in any manner disable the man. The plaintiff's attorney, a rising young lawyer, in his address to the jury, referring to the testimony of the professor, asked, "Did God Almighty create any part of the human body to be of no use?" At which Professor Hammond asked the lawyer if he could tell what God Almighty had created the mammary gland in the male for. This was a telling retort, before which, the story continued, the young lawyer collapsed, and the professor's side of the case was victorious.

Now, I agree with the young lawyer, that every part of the body has its use, either immediate or remote. We in our ignorance may not be able to understand the uses or functions of some organs or members of the body; nevertheless, we may be sure they were not created for mere embellishment. The mammary gland in the male is by nature designed as a *dernier ressort* for the survival of the mammalia. If the female dies, or is for some other reason unable to furnish her young with nourishment from the breast, the duty devolves on the male parent. But under our present advanced stage of civilization, even when both parents are able to furnish nourishment, they both refuse to do so, and the task is left to the patent baby-food man, with his perfect substitutes, peptonized or otherwise, and the mammary gland is on the decline. In the ordinary course of events, we consider the breast and udder of pregnant females as the natural source of milk, but many have discovered, and accidents have revealed, that it is not limited to the female sex nor to the pregnant state. Male creatures of both the human and brute kind have secreted milk, and the virgin female has been known to secrete it also. The Roman Charity, so famous in history and painting, is a prominent illustration of the latter in the human species—where an old man, confined in a dungeon, was supplied with nourishment by sucking the breasts of his daughter, a virgin. In the time of Aristotle it was known that some men had been found to have milk in their breasts, and Cardan, upon his own knowledge, relates the same, averring that there was such a quantity that a child might be nourished by it. Pliny relates the same of a man in his time, and Aldroobad mentions another instance of the same kind. I have been credibly informed by a reputable physician of New York City of a case he was called to treat. A young lady of seventeen years, whose sister died of consumption, and left her the baby, by reason of allowing the child to sleep with her and take hold of the nipples to quiet it, found her breasts secreting an abundance of milk.

I knew of a negro man in New Jersey who raised a litter of valuable black-and-tan puppies on milk which they sucked from his own breasts. There is a well-authenticated case on record, in the English "Philosophical Transactions," of a wether sheep giving suck to a lamb, and that not wantonly, or for once, but in a regular quantity, and enough for the support of the lamb for some months. Recently a faster in England had been exciting as much interest as our own Tanner, until the newspaper reporters discovered that he was being regularly nourished in like manner to the Roman old man. I myself removed the ovaries from a yearling heifer, and, by having the teats pulled for several days, caused her to give milk. She was a virgin of the bovine race. One of the German journals, some years ago, contained an advertisement of a physician who made a specialty of furnishing nurses. He excited the secretion of milk not only independent of pregnancy, but in men as well as in women. An applicant for a wet-nurse was always asked whether a male or female was desired. Males were very often preferred, under the belief that greater vigor was thus imparted to the infant.

These facts ought to be a warning to the female sex of the present time, when the female mammary gland seems to be subsiding under the influence of the patent baby-food man. Gynecologists of to-day are spaying the human female. Even the ancients knew that the male could secrete milk; now, if someone can discover how the male can bear young, the revolution will be complete, and the mammary gland of the female be one of the glories of the past. Our duties as physicians, however, will not be lessened; we may still have the troublesome caked breast and mammary abscess, but perhaps not so many sore nipples, unless the future male nurse take to wearing corsets, thus depressing and irritating the dug. Possibly the æsthetic features will be removed from the surgery of the mammary abscess; that is, we will not allow disfigurement to deter us from using the bistoury in the most available place. Certainly this change will bring some amazing conditions with it, as all changes do. When obstetrics and gynecology become branches of science relating only to the male, the obstetrician and the gynecologist will meet in peace. No more will the section on the diseases of women be the pandemonium we are so accustomed to witness at the great gatherings of medical associations. I can see another advantage in this new approaching order of things. A doctor in Pennsylvania writes an article on mammary abscess, in the course of which he says: "Indeed, physicians are sometimes charged with not desiring to hasten recovery, inasmuch as it is an opportunity to 'run up a bill' without incurring great responsibility." Of course this refers to the female mammary abscess, but let the physician try to run up a bill by delaying recovery of a mammary abscess in the male; then, if that male amounts to anything, the physician will incur the responsibility of being knocked out in the second or third visit.

As I have had no experience in treating mammary abscess and sore nipples in the male subject, I shall have to continue my story by relating to you my experience and method of treating the female gland.

There are three varieties of mammary abscess: *First*, supermammary abscess, when the morbid process is confined to the tissues covering the gland; *second*, mammary abscess—in this the substance of the gland itself is involved in the inflammatory state; and *third*, submammary abscess, when the pathological changes are confined to the tissues beneath the gland. The two former are the most common, the latter rare and dangerous. During the puerperal state there is a degree of activity in the mammary gland that is excessive. We seldom see the flow of milk established without a distinct febrile movement; therefore, it is not strange that very slight disturbances even in other parts of the economy do excite pathological changes in the puerperal breast. I am often reminded of Newport's experiments with bees when I see the mammary gland inflaming. Heat is due to movement, molecular or otherwise, and this is beautifully illustrated by the experiment with bees alluded to. During the winter, when the external temperature was 34° F., the temperature of the hive was found to be 48° F. when the bees were quiet, but, by tapping on the hive, and thus exciting the bees into a noisy activity, the temperature would increase to 102° F. In the milking breast we have an aggregation of organisms in action. If we can keep these organisms quietly at work the temperature remains normal, and no pathological changes are induced; but a malarial chill, a rheumatic seizure, a sudden cold, and all like conditions, simulate the tapping on the bee-hive. Quiet these, and no harm ensues. I have often aborted an approaching mammary abscess that had been ushered in with a chill by giving a full dose of the sulphate of quinine, and this, in a very

few hours. Likewise, when the induration is preceded by the prodromatous symptoms of rheumatic fever, it has been checked by the administration of salicylic acid. This latter remedy has been recommended by some writers on mammary abscess without their indicating the rationale of its action. I am sure when it is of avail it is in the rheumatic diathesis. So we could enumerate many other conditions, but the foregoing are, I think, sufficient to indicate to you the necessity of searching for the constitutional disturbance that manifests itself locally in this the most active of all the glands. Very often sore nipples are the cause of mammary abscess, and even if not so, this condition itself calls for prompt curative action. I think I have seen as acute intense suffering from sore nipples as from any other cause of human pain. Thus far in my practice I have been able to cure sore nipples promptly and efficiently. Of course, it is much better to prevent them from becoming so, and this you can do if you have the patient under observation before confinement. About three months before time, cause all garments that press the nipples to be loosened. Procure two large nutmegs; with a pen-knife dig out the centre of the nut, and fashion the cavity like a nipple. These are to be worn on the nipples all day; at night place them in a vessel containing brandy saturated with alum. These will draw out the nipples if they are retracted, and with the natural oil in the nutmeg, together with the brandy and alum, will tan and likewise keep them soft, thus preventing cracking. When you have not been able to follow this prophylactic treatment, but are called on to treat sore nipples, I would recommend you to proceed as follows: Wash the nipples clean with a soft linen rag, using white castile soap; with the tip of the finger rub on the sore the least possible amount of the officinal ointment of ammoniated mercury, then cover the nipple with a small wad of oakum fashioned like a cap. Now direct the mother to nurse the child on one side only for each meal; thus, as the interval between nursings is three hours, each breast will have six hours' rest. Before nursing, caution the mother to wash off carefully every vestige of the ointment; impress on her that the ointment is poisonous. After the child has been nursed, dry the nipple carefully with talc, using plenty of it; do not, at this time, wet the nipple with water; put on again the small amount of ammoniated mercury ointment and a fresh cap of oakum. If the nipple become wet from the oozing of milk, which it is liable to do while the baby is nursing at the opposite breast, dry the nipple very thoroughly with the talc. In fact, always keep the nipple dry with talc, and covered with oakum, using a fresh piece of oakum with each change. Patients have often been delighted, as I have myself, with this treatment, and I think many of you will be equally so if you follow carefully each detail.

In the treatment of mammary abscess, if it does form in spite of you, as it often will, when the pain is very severe ice-bags will relieve quicker and more effectually than any other application. If the induration is large, involving any large portion of the breast, properly applied bandages will relieve the tension. If these bandages are applied or strapping resorted to, the entire gland must be pressed firmly and evenly. Sometimes this even, firm pressure will stop the secretion of milk, and if it does so you will be pleased to find the inflammatory condition subside without other treatment. But occasionally, in those breasts prone to suppuration, you will find an excessive flow of milk; this condition of galactorrhœa is best treated with ergot and quinine in capsules, and small repeated doses of the iodide of potassium in solution. In regard to emptying the breast of milk while treating for abscess, we must be governed by circumstances; if there is a baby in the case it is all-important to keep the gland in action. According to my experience a child can safely nurse from a breast in which there is a large discharging abscess, provided it can be done without causing too much pain to the mother. I have never yet seen pus come from the tit. I have several times seen milk discharged from a sinus in the breast. This is different with the bovine race; when an abscess forms in the udder of a milking cow the pus is discharged through the dug. An abscess opening externally in the udder of a cow must be rare, for I have never seen one. I suppose this arises from the abnormal condition of the udder caused by constant milking.

Very often it becomes necessary to empty the breast of milk to relieve pain. This is best accomplished with a soda-water bottle. Heat the bottle very hot in boiling water, wrap a cold wet cloth round the neck near the mouth, introduce the nipple into the mouth of the bottle and press against the breast as firmly as possible. As the bottle cools the suction increases, and this takes place so slowly that the suction is produced gently but is very strong. With this method I have succeeded in drawing milk from a breast when every other means had failed. Many of the breast-pumps found in the shops are simply barbarous.

If you are called on to lance a breast, do so as gently as possible, and remember that one of the glories of a woman is her breast; therefore make the incision as far out of sight as possible. Bear in mind the story of Raymond Lully, the famous alchemist, who when madly in love with the fair Eleanor of Castile had his passion forever quenched by a sight of her breast with its hideous cicatricial abscess. After you have made an opening cover it completely with oakum, bandage tightly, leave the nipple projecting through the bandage in order to empty the breast if necessary, and likewise to prevent the milk from getting between the breast and the bandage.

If you succeed in keeping a troublesome breast in a healthy condition, you will be doing a great deal toward the welfare of the infant, and also toward inducing the mother to perform her natural functions. Then the child will grow up, and in the words of the psalmist will say unto you: "Thou art he that took me out of the womb; thou didst make me hope when I was upon my mother's breast."

Clinical Department.

A CASE OF ABSENCE OF THE CRANIAL BONES.

Dr. James L. Bailey, of this city, writes: "At 8.30 P.M., January 5, 1887, I was called to attend Mrs. P——, eighteen years old, in her first confinement. On examination I found the os only slightly dilated and the membrane intact. For a time I was in doubt as to what I had to deal with, as the presenting part was unlike anything I had yet encountered. It felt like a placenta at about the fifth month, but in an hour or so I was satisfied that I had a vertex case. What the mass in front was I could not conceive; it could not be placenta prævia, for there was no hemorrhage. It might have been a uterine polypus with a long pedicle; but as labor was advancing satisfactorily, and there was no indication for interference, I determined to await events. About 3 A.M. the vulva was distended, and on inspection I discovered what was undoubtedly the brain, divided into a number of lobes, and covered with a dark purplish membrane. From the posterior aspect there was a small kidney-shaped projection. After waiting a while and finding the pains were not strong enough I delivered with the forceps, expecting another pain to bring the shoulders. In ten minutes, as no pain had come, I determined to make traction on the head, knowing that the child could not live. But traction of itself was not sufficient, so I introduced both thumbs into the rectum, and with this manœuvre delivered the shoulders. The cause of the difficulty was then apparent, as the body was developed considerably beyond the average. There was complete

absence of the crainal bones from the brows upward; the ears were situated lower than normal, and the upper eyelids looked as if a V-shaped piece had been cut from each. The penis was rudimentary and the scrotum absent. The appearance of the child was very much like the case of anencephalus shown in J. Lewis Smith's work on diseases of children, with the exception of the brain. The mother stated that about five months ago she was badly frightened on discovering, in a hotel where she was living, a woman who was almost suffocated from inhaling escaping gas. The child lived thirty hours. An autopsy was refused."

GUMMY TUMOR OF THE BRAIN.

Dr. Benjamin Edson, of Brooklyn, reports the following case: "September 16, 1886, I was called to see Mr. C. H. R—, aged forty-nine, married, and having grown-up children, apparently healthy. Found him feeble, sallow, querulous, complaining of inability to take food, or even to swallow liquids, and suffering from obstinate constipation. He had a moderate cough, and some expectoration, the significance of which was somewhat obscured by profuse salivary discharge, and also free secretion from the mucous membrane of the buccal and naso-pharyngeal cavities, due, as was alleged, to large doses of iodide of potassium which he had recently taken. I learned that for some years past he had been continually changing from one physician to another, as often as he had become dissatisfied, and this seemed to be very frequently. Some time since he was operated upon for anal fistula, after which he thought that his constipation was worse than before. He had been treated for some time for considerable trouble in his throat, which he thought was becoming paralyzed. He formerly weighed about one hundred and seventy-five pounds, but had now fallen to about one hundred and thirty. He readily admitted that he had primary syphilis in 1860. There were marks of an old specific ulcer on the left leg; anæsthesia on the outer aspect of both limbs, particularly below the knees. There was necrosis of the turbinated bones on the right side of the nose. He said that he had been salivated by the use of mercury some years since, and would under no circumstance ever again take either mercury or iodide of potassium. There was a peculiar hesitancy in his speech, which he attributed to a short uvula, which he claimed had been burned off by some experimenting doctor. Careful observation, however, showed that the trouble was not in the vocal organs, but that there were brief recurring intervals during which the action of the brain was apparently arrested, cerebration for an instant being in abeyance. Both pupils were dilated, the right much more than the left. Further investigation showed that some time ago he began to omit words while writing, though for a time he was able to discover and correct his omissions. More recently he failed to discover his errors on perusing what he had written. In conversation he had no interest in anything that did not relate directly to himself; was intolerant of any opinion not fully in accord with his own, and manifested the symptoms and behavior of hypochondriasis, or more properly, perhaps, of syphilophobia. The diagnosis was made of syphilitic tumor of the brain, and a bad prognosis was given, especially as he refused to take longer *the* remedies from which alone relief could be expected. Although on one occasion he readily swallowed one-third of a gobletful of medicated water, he still insisted that he could swallow no nourishment, solid or liquid, on account of the obstruction in his pharynx. I examined his throat carefully, and assured him, unwisely as it proved, that there was nothing to prevent his swallowing, if he chose to do so. This proved to be the turning-point of my intercourse with him, which was now practically at an end. After a few days of persistence in starving, and refusal of treatment, he again wanted a change of physicians, and I gave up the case to Dr. George A. Ostrander. Under Dr. Ostrander's care he proved no more tractable, still refused food and medicine, and he finally died quietly on October 8th. He left a request that there should be a post-mortem examination of his body.

"Dr. A. W. Shepard, who had seen him once in consultation, performed the autopsy five hours after death. Present, Drs. Ostrander and Edson. Rigor mortis had not set in. The skin was sallow and shrunken. Muscles rather firm and quite well developed. Kidneys, heart, and spleen normal. Right lung completely broken down; costal pleura adherent; pleural cavity occupied by fibrous shreds and dark grumous fluid. Surface of left lung dotted over with dark, almost black, spots of the size of a silver three-cent piece. In the upper lobe was a large cavity or cicatrix, with fibrous elastic walls resembling gutta-percha, but inclosing no cheesy or calcareous material. It showed a very satisfactory arrest of the active trouble at one time existing in that lung. Dura mater but slightly adherent. Cerebral vessels on the surface distended to their full capacity, appearing as though forcibly injected. Pia mater very cloudy over the entire surface of the brain; no tumor apparent. On removing successive layers from the upper portion of the lobes, the general appearance was anæmic. At the level of the upper border of the corpus callosum, extending very near to it at its posterior extremity, and in the substance of the brain, was found on each side a gummy tumor, almond-shaped, with the point outward. The one on the right side was a little larger, and situated a little farther backward than that on the left. The larger was one and one-fourth inch by three-fourths inch and about half an inch in thickness. In each the tumor did not quite fill the cavity, the shrinkage doubtless occurring post-mortem. The growth consisted of a stroma, quite vascular, inclosing soft, gummy, or gelatinous material. There was nothing distinctive in the stroma or its contents that could be made clearer on microscopical examination. In many of its features this case is very like that of W. S. S., reported by Dr. Otis in his work on 'Syphilis and Genito-Urinary Diseases,' though in that case the diagnosis was not confirmed by an autopsy."

A FAMILY EPIDEMIC OF TYPHOID FEVER.

Dr. A. D. Bundy, of St. Ansar, Ia., writes: "Until this winter no case of typhoid fever has fallen under my care, nor do I know of any cases in the county in the past ten or twelve years. During November last a lady, the mother of a large family, contracted typhoid fever while nursing a daughter who lived in an adjoining State, nearly a hundred miles away. The daughter recovered, and the mother returned to her home, bringing an infant of her daughter's, which was about six months old. The baby had been somewhat ill, and was so still, having diarrhœa and fever at that time. The members of the family into which the baby was brought were father and mother, and seven children; four were girls and three were boys. One son, a young man, was a clerk in a store in an adjoining village, and came home only on Sundays, and remained but a few hours at such times. Some two weeks after the baby's arrival a boy, aged seven, was seized with the fever. He had all the characteristic symptoms of the disease, which continued twenty-one days. Next the mother, who brought the baby, came down; she was sick nearly twenty-one days, but had no abdominal symptoms. Next, a son, a young man living at home, was attacked by the disease a few days after the mother, and both of them during the last week of the fever of the boy first mentioned. The next one to be attacked was a daughter, aged sixteen, who was attending school, but who had been home occasionally during the sickness of the first boy. She at first had a pneumonia, clear and distinct, with superadded symptoms, of fever. The last one to be attacked was the young man who was home on Sundays only, whom I have already mentioned. He came down with the disease a few days after the daughter last mentioned. The first fourteen

days went on all well; abdominal symptoms not severe, and temperature not ranging over 104.3° at any time, and then only transiently. On the evening of the fourteenth day he had a large, bloody stool, and within six hours two more of less amount, causing the temperature to drop below normal, and leaving him in an exceedingly prostrate condition, where for two days he seemed to vacillate between life and death. Turpentine and laudanum checked the bleeding, and with stimulants and nutrients the patient rallied. For five days his temperature ranged from 100° to 103°. Then it slowly and persistently rose, ranging from 103° to 104.4°, unless antipyrin was given. The bowels remained quiet. On the twenty-ninth day extreme tympanites suddenly occurred, with severe abdominal pain, and five days later the patient died.

"No others of the family have, as yet, shown signs of the disease. In studying these cases it will be noticed that the severest case came to one who was the least, apparently, exposed. Is the profession satisfied entirely as to the mode in which the disease is transmitted—is it contagious or infectious? I have always doubted the contagiousness of the disease, and held to infection by means of intestinal secretions. Evidently we are not, as yet, through with discussing the origin, as well as the treatment, of this disease."

VOMITING OF PREGNANCY—FAILURE OF DILATATION—RELIEF FROM OTHER MEANS.

Dr. G. M. Lewis, of Vernon, N. Y., reports the case of a colored woman, twenty-six years of age, who had had two children and one miscarriage, and was now pregnant for the fourth time. She had suffered considerably from morning sickness during the early months of all her pregnancies, but beginning at the eighth week of the last pregnancy nausea and vomiting of the most distressing character gave constant trouble. Dr. Lewis began with the administration of mild remedies, such as bismuth, oxalate of cerium, effervescing draughts, nux vomica, calumba, etc., but all failed to give any relief. He then suggested the operation of dilatation. The patient was placed in position, and with a steel expanding dilator the cervical canal was carefully but thoroughly dilated to the full extent of the instrument. This gave no relief, and on the third day following the first operation a thorough dilatation with the steel dilator was again performed, after which the operator inserted his index-finger completely into the cervix. This operation was so thoroughly performed that it was confidently expected that the patient would improve immediately, but the vomiting persisted. Three weeks had now elapsed and she was becoming terribly emaciated; was suffering from hunger, yet unable to retain any form of liquid or solid food; had palpitation of the heart badly two or three times daily; was getting nervous and unable to sleep, and her pulse was 140 and very soft.

Dr. H. W. Carpenter, of Oneida, now saw the case in consultation. During the examination made at this visit he readily inserted his index-finger, up to the second joint, into the os. He was of the opinion that an abortion would result fatally, by reason of the debilitated condition of the patient, and it was decided to try large doses of the mild chloride of mercury. Every other night five grains calomel, with two grains of santonine, were administered, and one-fourth grain morphine was injected hypodermatically. Hypodermatic injections of morphine had been given previously, in order to relieve the palpitations as they occurred; but as they secured to the patient a better night's rest, they were given every night at 9 P.M. for twenty-two nights. Rectal injections of strong beef-tea (acidulated and peptonized) were given twice daily for the first week, after which the patient was able to retain broths on the stomach, and from that date continued to improve. She is now in the fifth month, well and hearty. Dr. Lewis believes the dilating was ineffectual in this case, and that the morphine and mercury did the work.

Progress of Medical Science.

The Relation of the Diseased Nasal Mucous Membrane to Asthma.—Dr. Böcker, of Berlin, summarizes his observations as follows: 1. Reflexes can be originated from every part of the nose. 2. The reflex irritation of the mucous membrane is independent of the corpora cavernosa (Hack). 3. The destruction of the corpora cavernosa does not arrest the reflexes. 4. The swelling of the lower turbinated body is physiological. 5. The reflex-arresting-power of large polyps does not exist. 6. Asthma is seldom associated with nasal polyps. 7. Asthma can be originated under certain circumstances by all mucous membranes. 8. Asthma is usually produced by the bronchial mucous membrane. 9. Odors and psychical impressions can produce asthma. 10. Normally, asthma cannot be produced by the nose. 11. Trigeminus-asthma is caused by morbid states of the nervous system. 12. The impossibility of respiring nasally may produce asthma. 13. Asthma occurring from "catching cold" is originated by swelling of the bronchial mucous membrane. 14. Hay-fever asthma is produced by direct irritation of the bronchi. 15. Cavernous tumors, papillary growths, and adenoid vegetations often produce nightmare. 16. Asthma often is independent of nasal conditions. 17. The treatment of nasal affections can sometimes cure asthma. 18. Extended galvano-caustic operations on the nose are to be avoided. 19. Radical cure of asthma is seldom effected by mere removal of nasal polyps. 20. In the treatment of asthma, constitutional treatment is of the greatest importance.—*The Journal of Laryngology and Rhinology*, January, 1887.

Sulpho-Carbonated Water in Diarrhœa.—Dr. P. de Champeaux relates, in the *Bulletin Général de Thérapeutique* of November 15, 1886, two cases of chronic diarrhœa of very severe type in which most happy results were obtained by the use of sulpho-carbonated water, as recommended by M. Dujardin-Beaumetz. This water is made by adding six drachms of pure sulphide of carbon and thirty drops of essence of mint to one pint of water, shaking thoroughly and then allowing to settle. The water only is used, and the sediment of sulphide of carbon is allowed to remain, but water can be again added to it to be charged as in the first instance. The dose is from one to four tablespoonfuls or more a day in milk. The special indication for the employment of sulpho-carbonated water in chronic diarrhœa is the presence of fetid stools, for the author says that he has tried it in other cases in which the intestinal discharges had no bad odor and has seen no benefit follow its use. It should not be given alone, but only as an adjuvant to other remedies of acknowledged utility in the treatment of chronic diarrhœa. The good effects of the remedy may not be apparent immediately, but within three or four days the stools will begin to lose their fetid character. The sulpho-carbonated water should be continued for a certain time after the desired results have been obtained, as, if abandoned too soon, the fetid stools are liable to reappear.

Bronchitis in Reference to Position during Sleep.—Dr. Nosovitch has examined 738 Russian soldiers, and found bronchitis in 235 (31.8 per cent.). In 97 (13.1 per cent. of the whole number examined, and 41 per cent. of the bronchitic men) the disease was left-sided; in 72 (9.7 per cent., respectively, 30.5 per cent.) right-sided; and in 66 (8.9 per cent., respectively, 28 per cent.) both sided (*London Medical Record*, February 15, 1887). Being struck with such an extraordinary frequency of one-sided localization of the disease (41 + 30.5 = 71.5 per cent.) he began to search for an explanation of the fact, and soon came to the conclusion that it might depend upon the habit of sleeping on one side (on the right in some, on the left in others), which habit might involv

a certain difference in conditions with regard to ventilation between the right and left lung. To verify that supposition, he undertook observations for ten successive nights on 612 sleeping soldiers, and found that 37.44 per cent. of them slept on the right side, 33.17 per cent. on the left, 23.09 per cent. on the back, and 6.29 per cent. on the belly. The figures obtained obviously could not support the original hypothesis; for if a defective ventilation of the lung could be a predisposing cause of bronchitis on the same side, a right-sided affection should be met more frequently than the left-sided one, which was not the case. Still the author is inclined to think that there exists a certain etiological connection between one-sided bronchitis and one-sided posture during sleep. When a man sleeps on one side, his respiratory tracts on the opposite (upper) side are more exposed to the action of cold. A certain parallelism of the author's figures seems to speak in favor of that supposition: there were 33.1 per cent. of left-sided sleepers, and 30.5 per cent. of right-sided bronchitis; 37.4 per cent. of right-sided sleepers, and 41 per cent. of left-sided bronchitis; while the number of both-sided bronchitis (28 per cent.) coincides with the number of men who slept on the belly or back (29.8 per cent.), and in whom, therefore, both of the lungs stood under identical conditions in regard to their liability to catching cold. A certain predisposing influence may be ascribed also to the fact that the free (non-compressed, upper) lung of the sleeper makes more extensive excursions, works more, and rests less, than its compeer. Finally, more extensive and free movements of the non-compressed lung may favor a relatively easier and more extensive penetration of "pathogenic principles" into the latter.

Tuberculosis from Circumcision.—Dr. E. Lehmann reports ten cases of tuberculosis in Jewish children, occurring by inoculation during circumcision. The rabbi who performed the operation was the subject of pulmonary phthisis, and it was supposed that the virus was conveyed from his mouth when he applied his lips to the wound to arrest the hemorrhage. In each of the infants, about ten days after the circumcision, the preputial wound became ulcerated and the inguinal glands became swollen and indurated. Syphilis was excluded by the absence of any secondary symptoms. Two of the children died of tubercular meningitis, and three had multiple abscesses and died of exhaustion. Dr. Elsenberg relates a similar case occurring in Warsaw. The preputial wound did not heal, but suppurated, and the inguinal glands became enlarged. Later, an abscess appeared over the left mastoid process. There was no eruption on the skin, and anti-syphilitic treatment gave negative results. The child finally died, and microscopical examination of the diseased tissues revealed the tubercular nature of the affection. The author has met with three additional cases of a like nature.—*Lo Sperimentale*, October, 1886.

Hæmoglobinæmia.—Dr. Silbermann, having carefully studied this subject, formulates the following conclusions: 1. Hæmoglobinæmia and hæmoglobinuria represent a process in which the white blood-corpuscles, as well as the red, are concerned. 2. The hæmoglobin which has been dissolved in the blood destroys the white blood-cells, and thus occasions a decided increase in the amount of fibrin-ferment. 3. This increase of the ferment can also be produced when the hæmoglobin passing into the blood-plasma produces the substance necessary to the formation of fibrin-ferment by abstracting it from the protoplasm of the white blood-cells, without actually destroying them. 4. If there are large quantities of the ferment developed as a result of the action of hæmoglobin in the blood, fatal thrombosis may occur, or an excessive stasis in the large abdominal veins, leading to a fatal anæmia of the brain. 5. If the action of the hæmoglobin is not so intense, not so much fibrin-ferment is developed, and consequently the abdominal venous stasis is not so great, although it is still considerable. 6. The excretion of hæmoglobin through the kidneys is accomplished chiefly in the convolated tubules. 7. If, however, damage has been done to the glomerular epithelium through the general disturbance of the circulation, hæmoglobin will also be excreted in the Malpighian tufts. 8. The hæmoglobin rings found in the glomeruli partly are formed there, partly are produced by the backing up into them of hæmoglobin out of the convoluted tubules. 9. The convulsions appearing in toxic hæmoglobinæmia are to be considered as anæmic, not as uræmic. 10. The fever attending both toxic and paroxysmal hæmoglobinuria is occasioned by the large amount of fibrin-ferment circulating in the blood.—*Zeitschrift für klinische Medicin.*

The Indications for Nephrectomy.—Dr. P. Wagner, of Leipzig, has published an article dealing with this subject. He says (*London Medical Record*, February 15, 1887) that "the indications for extirpation of the kidney have recently been somewhat restricted. There is now much objection to the removal of a wandering kidney of healthy structure; nephrectomy differs from ovariotomy in this important respect, that the kidney belongs to the class of organs on which depend the proper working and vitality of the organism. In performing nephrectomy the surgeon runs the risks of removing a single organ, or of leaving the fellow kidney either already diseased, or liable to become so sooner or later after the operation. This last result is not unlikely to occur, according to some surgeons, after removal of a calculous or suppurating kidney. Cases have been recorded of death from anuria after nephrectomy, in which the remaining organ, on both macroscopic and microscopic examination, appeared to be normal. It is open to doubt whether, under certain conditions, as in aged and very feeble subjects, the remaining kidney is capable of becoming enlarged to such an extent as to perform the functions of two renal organs. It has been pointed out by Rosenheim that even in the most favorable cases the subject of nephrectomy is never able to perform with the remaining organ the full functions formerly performed by two kidneys. Nephrectomy is urgently indicated in cases in which the renal lesion directly threatens life, as, for instance, in cases of severe injury to the organ and malignant disease. That the results of the operation have been so bad in the latter class of cases is owing to the difficulty of establishing a sure diagnosis before the disease has attained an advanced stage. In cases of non-malignant renal tumor the organ should be removed when of such increased size as to give rise to serious symptoms. The operation is also indicated in tubercular disease affecting but one kidney. This, however, Dr. Wagner points out, is a condition that is rare and very difficult to recognize. In cases of renal calculus and pyonephrosis the surgeon should content himself at first with nephro-lithotomy or nephrotomy. In suppurative affections nephrectomy is indicated if the disease be progressive, has caused emaciation of the patient and hectic fever, and is likely to be associated with general amyloid degeneration. Hydronephrosis and renal cysts, apart from special complication, afford no indications for nephrectomy. Dr. Wagner holds that the extra-peritoneal operation should always be performed if possible. In cases of renal calculus, of pyonephrosis, of tubercular disease of the kindey, and of uretal fistula, he would advocate Simon's lumbar incision. In the removal of a diseased wandering kidney, or of a large renal tumor, it would be found necessary to perform the trans-peritoneal operation. In discussing the value of the different methods that have been proposed for determining the presence or the functional capacity of a fellow kidney, Dr. Wagner states that some of these are too theoretical, some applicable only to the cadaver, others too heroic and dangerous, and most of them far too uncertain to be of any real utility."

THE MEDICAL RECORD:

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GEORGE F. SHRADY, A.M., M.D., EDITOR.

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THE CAUSES OF DISEASE IN IMPURE ICE.

THE great sanitary problems which are presented in the supply of pure drinking-water for large towns are so complex that accurate knowledge concerning them must of necessity accumulate slowly as science advances along the lines of new methods of research. A great deal in this direction has been expected, and much of value has been revealed, as an outcome of the study of bacteria, which within the past four or five years has attracted so much attention.

The biological analysis of water has been established as an almost necessary adjunct to the chemical examination; the relations of certain species of bacteria to several forms of serious disease has been definitely made out, and a very large number of facts elicited regarding the form and life-history of different kinds of germs.

While the danger of the transmission of disease from one person or community to another by impure water has long been recognized, the rôle which ice formed from polluted water may play in the same way has not seemed so certain, on account of the very prevalent notion that water cleans itself in freezing.

Still, the dangers which may lurk in impure ice have not been overlooked by physicians, and several severe outbreaks of disease have with very good reason been attributed to the use of bad ice. But a certain measure of uncertainty has existed even in the most marked cases, owing to the lack of exact knowledge regarding the purifying agency of cold. For this reason medical men have, as a rule, been disposed to caution in condemning suspected ice.

It appears, if we may accept the conclusions of workers in bacteriology, that the greatest danger from water, as well as ice, lies not in the things which can be appreciated by sight or taste, but in those invisible foes of man, the bacteria which may cause disease.

Our neighbors at Albany have for a long time been agitated over the propriety of pumping up the Hudson River water which is contaminated with Troy sewage and using it unfiltered for potable purposes. New Yorkers have looked on with complacency at this sanitary agitation, their equanimity undisturbed owing to their consciousness of the general excellence of the Croton water system. The unpleasant possibility of a pollution of the Hudson River ice, which we so largely use, from Troy and Albany sewage has not greatly disturbed us, since the bliss of our ignorance has been too comfortable to give up without a reason.

We need not apologize for devoting so large a part of the present issue to a series of studies which throw much light on the subject of impurities in ice in general, and particularly in that which is used in New York. These studies seem to establish, on precise experimental evidence, the fact that disease-producing bacteria may live for a long time in ice. The bearing of this fact alone on the use of ice which is cut in sewage-polluted water anywhere is too obvious to need further comment.

It is very difficult to establish an absolute standard of purity as regards the bacteria, either in water or ice, because as yet so little is known about the hosts of them which seem to be the natural denizens of most water. We would call attention to the fact that Dr. Prudden has endeavored, in laying down his standard of bacterial purity, or rather of allowable bacterial impurity, in water or ice, to place his criterion, even at the expense of absolute definiteness, on the side of safety, a position which would seem to be necessary, so long as our knowledge of common bacteria is incomplete.

While the tendency of these researches would seem, at first sight, to add to the burden of a moderately safe existence, a careful study of the results shows that in reality they are on the whole reassuring rather than otherwise, because in the place of suspected unknown dangers they point out to us the exact nature and extent of the evils, and the easily established measures by which their avoidance may be secured.

MAKING THE DEAF-MUTE HEAR.

HALF a century ago Braid, of England, stated that he had been able to make several congenital deaf-mutes hear by hypnotizing them, and causing them to listen to various sounds. Braid's observations do not seem to have attracted much notice, or at least to have been extensively repeated. Dr. Berkhan, of Braunschweig, however, has recently taken up the matter and made experiments upon nine young persons who were completely deaf.

The deafness was first thoroughly tested by various kinds of noises, the person was then hypnotized and then the hearing tested again. The following account will best show the result: G. S——, aged fourteen, healthy and well grown, from his earliest youth had been deaf and dumb. He was hypnotized. During the hypnosis moderately loud noises near the ear caused quick movements of the head and body. After hypnosis he heard spoken behind his back the sound "a" very plainly; o, not so plainly; the other vowels not at all; knocking on the door, plainly; whistling, not at all; ticking of a clock, not at all. Various tests made during the subsequent year and a half showed that this power to hear certain sounds was not only retained but strengthened. In three other cases similar results were obtained; in five cases the experiments were failures.

It is not claimed that by hypnosis the deaf may be made to hear well, but in a certain proportion of cases it seems possible to put them in slight communication with the external world by means of the sense of hearing.

To the man who has heard nothing for years the screech of a locomotive may sound sweeter than the symphonies of Beethoven.

COLLECTIVE INVESTIGATION REGARDING CHOREA.

THE report of the Collective Investigation Committee of the British Medical Association upon the subject of chorea has been published. It is based upon 439 cases, and the facts are carefully collated by Dr. Stephen Mackenzie. The report is an interesting one, yet we confess to have found in it no new facts that will change present views upon the history of the disease. As to the mooted point of its relation to rheumatism, it is stated that that disease preceded the chorea in about twenty-six per cent. of cases, which is only a little in excess of the figures of Dr. Sturges (twenty per cent.). Scarlet fever preceded it in twenty-nine per cent.; anæmia in twenty per cent.; mental overwork in sixteen per cent.; and some form of nervous shock in fifty per cent. The usual duration was from two to three months. The death-rate was two per cent. Some cardiac lesion was present in thirty-two per cent. of cases, in one-half of which rheumatism was present.

A large number of complications of the most varied character were noted, the most common one being headache. Nervous affections of some kind were noted in forty-six per cent. of the families of those affected, "nervousness" being most common, and next it chorea. Arsenic, iron, and full feeding, with rest, were the main things relied upon in treatment.

THE ACADEMY OF MEDICINE.

THE Academy of Medicine may justly be regarded as the present and future centre of medical interest in this city. It holds and will maintain this position, not only by its age, but far more largely by the gradual accumulation of those material conditions which most influence the profession, and give permanency to its character and reputation. The first and most important step which the Academy took in advance was the purchase of a suitable building. This act gave what it sadly required—a local habitation and a name. Then followed the erection of an audience and library room, which have naturally proved very attractive features of its equipment. The rapid growth of the library, now scarcely second in value to any other in the country, and the presence on its tables of all the medical journals of the world, complete the appointments which place the Academy on the basis of the great central medical organization of the city. Of the future of the Academy we may safely predict that, with judicious management, it will at no distant day be the most powerful and influential scientific and professional corporation in this city. The munificent sums of money which have fallen to it during the past year are only precursors of larger endowments which it will receive in the future. In view of the growth of the Academy, and its prospectively commanding position among the institutions of the city, it is pertinent to inquire as to the conditions essential to the fulfilment of its great mission.

Its location must be more central. Looking forward to the future distribution of the profession in and around New York, and the direction and extension of lines of rapid transit, it is evident that some more central and accessible location should be selected.

The Academy should have a building commensurate with the present and future wants of the profession. In addition to its assembly hall, and library hall with its rooms for private study, there should be parlors for receptions, lodgings, and café for medical men visiting the city, a museum with all of its appointments, and laboratories for special investigations.

The internal organization of the Academy needs reconstruction. Its business should be transacted at quarterly meetings held for that special purpose, thus saving valuable time now lost at the regular meetings. The scientific meetings should be entirely devoted to the discussion of vital and current questions in the several branches of the medical sciences, selected by a competent scientific business committee. The subject to be discussed should be so stated as to sharply define the question at issue, and every speaker should be required to conform rigidly to parliamentary rules. The Academy would thus become the great theatre of contention where the best talents and attainments of the profession would be brought into honorable and earnest effort in the elucidation of scientific truths. There is, in the profession in New York, a class of young men who would develop high forensic abilities if there was a forum where they could be trained to the proper exercise of their natural and acquired powers. The sessions of the Academy would also become of far greater importance to the profession at large were they thus devoted to disputations on subjects of immediate interest by members who, thoroughly prepared for the discussion, delivered their arguments in set forms of speech. The sections should be devoted to the reading of papers and the discussions of the topics which they present, but no paper should be read at the meetings of the Academy except as a part of the discussion of the specific topic under consideration. While the sections would thus become the active and efficient auxiliaries in the selection and preparation of the scientific business of the Academy, they would be most interesting societies in all branches of the medical sciences.

One more feature should be added to the scientific work of the Academy, viz., courses of lectures on special subjects. There could be three or four courses of lectures annually, which would prove most attractive and instructive to the great body of medical men.

These are but a few of the many suggestions of reform which occur to us in considering the future of the Academy. They are put forth as suggestions merely, but we trust they will awaken a new interest in our great central medical body, and lead to mature plans for its advancement to a higher and more influential position.

KREMJANSKI ON THE TREATMENT OF PHTHISIS BY ANILIN OIL.

THE most striking communication made at the Congress of Russian Physicians in Moscow, in January last, was by Professor Kremjanski, of Charkow. The title of his paper was, "The Treatment of Phthisis on the Basis of its Parasitic Origin." Professor Kremjanski accepted the theory of the bacillary origin of phthisis, and de-

scribed a mode of treatment based on this view, whose results, if true, have been rightly characterized as "astounding" and "revolutionary." We are unable to give a detailed account of his method, as only a synopsis (in the *St. Peterburger Medicinische Wochenschrift*) is as yet accessible.

Professor Kremjanski attacks the bacilli with a diet peculiarly innutritious for these organisms, and with germicidal drugs given internally and externally. The principle and peculiar feature of the diet is an abundance of acid-bearing substances, such as "kwass," lemonade, acid fruits, kumyss, and kefir. Internally he gives salicylate of soda, benzoate of soda, besides causing the patients to breathe an atmosphere containing ethereal oils. As the specific for disinfecting the lungs and blood in phthisis he gives inhalations of anilin oil by means of a specially constructed atomizer. The reader of the paper presented two cases illustrating his mode of treatment. One of these had been given four drops of anilin daily, with tincture of menthæ and ipecac, acid diet, with raw flesh, and inhalations of anilin.

Considerable skepticism was expressed regarding Kremjanski's results, and a commission of five was reported to inquire into them. Professor Kremjanski is sure that the investigation will be for him a triumph.

NEW YORK DUST AND THE DISORDERS OF SPRING.

THE month of March in New York City is the most comprehensively and penetratingly dirty month out of the whole year of dirty months in this never-overwashed city. Dr. Morell Mackenzie thinks American catarrhs are largely due to the dust, and it is not unreasonable to believe that the tremendous clouds of unsterilized earth which are driven into the faces of our city's population during this season have something to do with the excess of coughs and colds and the high mortality-rate during this period, which in some years is exceeded only in the hot months of summer. It is not so much spring-medicines, "one hundred doses for a dollar," as cleaner streets that New Yorkers need.

THE EASTERN DISPENSARY.

WE take pleasure in chronicling the fact that the Eastern Dispensary has been added to the list of the institutions which pay their attending physicians. There does not seem to be any good reason why medical men alone, of all professional classes, should work without recompense. And we regard it as a step forward in the status of our profession when dispensary directors begin to see that it is wise and just to pay their medical officers for services rendered.

"REPUTABLE" AND "REGULAR."

WE venture to say that most classes of intelligent people would prefer to be considered "reputable" rather than "regular" in the eyes of their fellow-men. Regularity is an excellent thing, no doubt, especially in the matter of the bowels, but a man's reputation is or ought to be the dearest thing to him in life. We make these remarks *à propos* of the organization of a new medical society in Cincinnati, when a lively discussion ensued over a proposition to have the membership consist of "reputable" physicians instead of "regular" physicians.

Some stump-speech logic was indulged in over the subjec tof irregulars, and the motion to substitute "reputable" for "regular" was lost by a large majority. Henceforth, the Hamilton County Medical Society may not have any reputable members, but they will all be regular. We trust that some good fortune may bring it about that all its "regulars" will be reputable. We know of some who are not.

But is it not true that a reputable physician cannot be an irregular one?

BENZOYLTROPIN, A NEW LOCAL ANÆSTHETIC.

MANY efforts have been made to find some agent equal in local anæsthetic effect to cocaine. The kawa-kawa of Lewin, obtained from *Piper methysticum*, was found to have some such property, but to be far inferior in practical value. Apomorphia has also some local anæsthetic power if used in colossal dosage. Recently drumine has excited attention, but trials of it in England have given unsatisfactory results.

Professor Wilhelm Filehne, of Breslau, has been investigating the subject from a chemical stand-point, and while he has not yet obtained, synthetically, cocaine or a substitute for it, he has found in what direction to look, and also the principle in the cocaine molecule which gives to it its local anæsthetic action. Filehne discovered that the union of tropin, a molecule derived from atropin, with benzoic acid produced a substance which he calls *benzoyltropin*. This possesses "an exquisite local anæsthetic effect." It has also the mydriatic power of all the tropeïnes; paralyzing accommodation in the same way.

The ecgonin molecule in cocaine plays an indifferent rôle, according to Filehne, and the benzoyl molecule is the active one. Some anæsthetic action was found to exist in a large series of benzoyl derivatives which were experimented with. The most active, after the benzoyltropin above referred to, was benzoylmethyltriacetonalkamin. None of the series could be used practically because they caused, at first, burning and painful sensations, applied to the conjunctiva.

The benzoyltropin is, therefore, the nearest approach to cocaine in practical utility. The objection to it is its mydriatic power and its higher cost.

SUPERFECUNDATION.—Dr. J. B. W. Nowlin adds to the list of cases of superfecundation (*The Southern Practitioner*). In 1863 he was called to see a negro woman who was in labor. When he arrived, he found that she had given birth to twins. One of them was a pure African, with all the typical features of that race, and the other a very bright mulatto, exhibiting evident characteristics of the Caucasian race. The mother was a pure black, with all the typical features of the African, as was also the husband. Upon inquiry Dr. Nowlin ascertained from the mother that she had permitted intercourse with a white man living with her master the day succeeding the same act with her husband. There were two separate placentæ and cords.

News of the Week.

ANOTHER SURE CURE FOR COLDS.—Dr. J. H. Whelan (*The Practitioner*), after truthfully demonstrating the inefficiency of all present methods of treating colds, recommends as very nearly specific the following:

℞. Quininæ sulphatis ..... gr. xviij.
Liquoris arsenicalis ..... ♏ xij.
Liquoris atropinæ ..... ♏ j.
Extracti gentianæ ..... gr. xx.
Pulveris gummi acaciæ, q. s. ut fiant pilulæ xij.

Sig.—One every three, four, or six hours, according to circumstances.

He adds: "If these pills be commenced in the early stage of a common cold, *i.e.*, when the affection is as yet confined to the nose and pharynx, the affection will be nipped in the bud. At starting one pill should be taken every three or four hours, and later on every six. If a catarrhal subject has a box of these pills always at hand, he has, I believe, a weapon wherewith to meet and defeat his enemy. The longest time I have seen a cold last while the patient was fairly taking these pills was three days."

WE REGRET TO LEARN that the well-known surgeon Dr. William Hunt, of Philadelphia, was recently run over by a wagon and had his right arm broken.

DR. H. C. WOOD, of Philadelphia, has been offered the chair of medicine at the Johns Hopkins University.

THE PRESCRIBING of fluid ext. rham. cat. to a sensitive spinster caused a Philadelphia surgeon to lose his patient.

MEMORIAL TO DR. AMBLER.—The bronze tablet recently executed from funds provided for the purpose by the medical corps of the United States Navy has just been hung in the Corcoran Art Gallery, Washington, on exhibition. Eventually the tablet will be placed in the Surgeon-General's office at Washington. The memorial is in honor of Dr. James Markham Ambler, the surgeon of the Jeannette Exploring Expedition to the Arctic regions. The inscription reads as follows: "James Markham Ambler, M.D., U. S. N., Lena Delta, October 9, 1881. Duty stronger than love of life."

SIXTEEN MEDICAL COLLEGES IN OHIO.—*The Columbus Medical Journal* has discovered a new medical college at Lebanon, O., making sixteen in all that the fortunate State of Ohio now possesses. The Lebanon College has always had a faculty that outnumbered the class.

A UNITED STATES GOVERNMENT COMMISSION TO INVESTIGATE YELLOW FEVER INOCULATION.—The Sundry Civil Appropriation Bill passed by the last Congress provides an expenditure of a sum not exceeding $10,000 for the investigation of methods practised in Mexico and Brazil for preventing yellow fever by inoculation. The President is authorized to cause the expenditure to be made, and may appoint any person to carry it out.

QUININE is now selling at about fifty-two cents per ounce.

DR. JOHN MARSHALL PAUL, a prominent physician of Belvidere, N. J., died suddenly on March 17th, of pneumonia. He graduated from Williams College in 1864, and then served six months in the Medical Department of the Sanitary Commission of the Army of the Potomac. In 1868 he was graduated from the University of Philadelphia, and served a term as resident physician in St. Mary's Hospital, Philadelphia. In 1869 he moved to Belvidere, where he had since practised.

IS PNEUMONIA CONTAGIOUS?—Under this title, *The Sanitary News* says that at a house in Providence, R. I., about a month ago, a lady died of pneumonia. A week later, two more fatal cases developed in the same house. The man who was sick was an Odd-Fellow. He was cared for by a brother of the order and a physician, both of whom are now seriously sick with the disease. The physician's name is Dr. Lester S. Hill. Similar cases to these have been reported before.

A STATE BOARD OF HEALTH FOR VERMONT.—A State Board of Health has just been established in Vermont, the twenty-ninth State in the Union to be provided with such an organization.

THE PHILADELPHIA COUNTY MEDICAL SOCIETY has memorialized the Legislature in opposition to the passage of Section 10 of the proposed Pharmacy Law, now pending. This section so far repeals the Registration Act as to permit druggists to engage in the practice of medicine, provided that they conduct only an office practice. The Society urges that this proposition is unworthy of approval and support, for many reasons, but above all because of the danger to which it exposes the lives of individuals and the health of the community. The Druggists' Association of Philadelphia has also taken similar action.

THE COLLEGE OF PHYSICIANS AND SURGEONS OF CHICAGO held its Commencement exercises on February 21st, when fifty-three gentlemen received their degrees.

THE CENTRAL COLLEGE OF PHYSICIANS AND SURGEONS OF INDIANAPOLIS, IND., conferred degrees upon four graduates at its Commencement, February 26th.

THE MINNESOTA HOSPITAL COLLEGE held its sixth Annual Commencement on March 11th, and conferred degrees upon twenty graduates.

THE LOUISVILLE MEDICAL COLLEGE held its Commencement exercises on February 25th, with sixty-three graduates.

THE MEMPHIS HOSPITAL MEDICAL COLLEGE held its seventh Annual Commencement on March 1st, and graduated a class of forty-one.

THE COLLEGE OF PHYSICIANS AND SURGEONS OF BALTIMORE held its fifteenth Annual Commencement on March 15th, and graduated a class of eighty-eight.

THE MEDICAL COLLEGE OF OHIO held its eleventh Annual Commencement on March 8th, and graduated eighty-four students.

MIAMI MEDICAL COLLEGE held its Annual Commencement on March 9th, when a class of twenty-nine was graduated.

THE BALTIMORE MEDICAL COLLEGE held its seventh Annual Commencement on March 15th. Degrees were conferred on eight graduates.

MEDICAL COLLEGES AT ODDS.—The Legislature of Ohio has been appealed to by the Medical College of Ohio, and requested to pass a bill granting to it also the privileges of the county hospital in proportion to the number of students in attendance. The Miami Medical College now has the exclusive privilege of using this hospital.

IT IS RUMORED THAT DR. LANGE, of this city, has resigned his hospital appointments here and gone to Germany, to accept an official position under the German Government.

GASTRIC HYSTERIA.—A Saginaw, Mich., daily reports in detail the case of a girl, seven years of age, who for seven weeks has practically taken no food. She has no organic disease, it is said, and has been reduced by her fast to such a condition of weakness and emaciation that death is expected.

CHRISTIAN SCIENTISTS CAN PRACTISE MEDICINE IN IOWA.—In a recent test case brought to trial by Charles E. Kelly, a "Christian Scientist," at Mason City, Ia., before a justice of the peace, the jury rendered a verdict in favor of the defendant. A man practising the electric bath business in Mason City also proposes to test the constitutionality of the law.

THE MORTALITY-RATE OF DIPHTHERIA IN BERLIN.—In 1886 there were 6,649 cases, with 1,535 deaths, giving a mortality-rate of 23.1 per cent.

AN IMMENSE HOSPITAL, to contain six hundred and sixty-four beds, is to be built at Madrid. There will be ten pavilions, constructed on the Tollet system.

IMMEDIATE PERINEORRHAPHY.—Dr. M. J. Madigan, of Brooklyn (*Medical Standard*), denies the value or propriety of immediate perineorrhaphy after parturition. He cites some authorities who have admitted that good results were often not obtained, and concludes by saying: "The principles laid down by Billroth are sufficient to demonstrate that, pathologically, the position of the gynecologist as to immediate perineorrhaphy is invalid. Whenever a laceration occurs in my practice, I place the patient on her side, bring the knees together, secure apposition by means of pads, placing absorbent cotton over the laceration, and wash the parts with an antiseptic, alcoholized, aqueous solution. The results are excellent. If perineorrhaphy be needed, it can be much more easily performed, with better chances of success and less discomfort to the patient, two months after delivery than during the lying-in period. It must be admitted that here, as elsewhere, the teachings of gynecology have led the practitioner to look upon woman as an appendage of her genito-urinary organs, and have taught him to disregard the most ordinary principles of general pathology."

A GERMAN HOSPITAL IN BROOKLYN.—The sum of $50,000 has been promised to form part of a fund for erecting a German hospital in Brooklyn.

THE MEHARRY MEDICAL COLLEGE, on February 21st, conferred degrees upon ten gentlemen of color.

A MEDICAL PALACE—A JOY FOREVER.—Under these titles the local paper at Cleveland, O., refers to the new college building of the Medical Department of Western Reserve University. This has recently been erected through the liberality of one of Cleveland's business men, Mr. John L. Woods, at a cost of $175,000. The building is certainly a beautiful one architecturally, and thoroughly equipped in every way. The college is fortunate in having received the gift of the land from Senator Payne, and a fund of $10,000 from Mr. H. B. Hurlbut for establishing a dispensary.

THE MICHIGAN STATE BOARD OF HEALTH is one of the oldest and most efficient organizations of the kind in the country. Its annual reports have often contained articles of the greatest practical value, and through the labors of members, and especially of its efficient executive officer, Dr. Baker, saving of life and money have been accomplished. Yet, at almost every session of the Legislature during the fifteen years' existence of the Board a bill has been introduced to abolish it. The Board is not enough of a political institution, apparently, to suit some Michiganese statesmen.

THE EMPEROR WILLIAM'S PHYSICIAN, Dr. Lauer, has been presented with the sum of 300,000 marks, with a statement recognizing his efficient services.

MEMORIAL TABLET TO THE LATE DR. AUSTIN FLINT.—The Commissioners of Charities and Correction have had executed a tablet to the memory of Dr. Flint, to be placed in Bellevue Hospital. The tablet is unique in design and exquisite in workmanship. The inscription which is imprinted on the shining brass, in Roman letters of black enamel with initials in red enamel, is surrounded by a band of conventional palm-leaves, relieved at intervals with mat scroll-work. The inscription reads as follows: "In Memory of Austin Flint, M.D., LL.D. Entering the profession with broad culture and thorough education he remained an active physician to the last day of his life. As a medical writer he added to the knowledge of the American profession and to medical science. As a teacher he was loved and respected by thousands of his pupils in all parts of the country. As physician to Bellevue Hospital for twenty-five years, he contributed largely to its reputation by his character, acquirements, labors, and wise counsels. Erected by the Commissioners of Public Charities and Correction. H. H. Potter, President; Thomas S. Brennan, Charles E. Simmons."

CHANGES IN ARMY HOSPITAL STEWARDS.—We learn that Surgeon-General Moore is taking active steps to carry out the provisions of the recent act of Congress affecting the corps of hospital stewards of the army. It is proposed that the name of these attachés of the army be changed to apothecaries.

SCHROEDER'S SUCCESSOR.—It is believed that Professor Winckel, of Munich, will succeed the late Professor Carl Schroeder as Professor of Obstetrics at Berlin.

FOUR BILLS FOR REGULATING THE PRACTICE OF MEDICINE are now before the State Legislature of Kentucky. This looks as though the profession of the State was failing in the duty of carefully looking after its own interests and those of the public.

Reports of Societies.

NEW YORK PATHOLOGICAL SOCIETY.

Stated Meeting, February 9, 1887.

T. MITCHELL PRUDDEN, M.D., PRESIDENT, IN THE CHAIR.

DR. G. C. FREEBORN demonstrated under the microscope the results of

TWO NEW METHODS OF STAINING ELASTIC FIBRES,

namely, Lustgarten's and Herxheimer's. Lustgarten (*Fortsch. d. Med.*, iv., 1886, No. 22, p. 734) employs for this purpose Victoria blue, a basic aniline dye, from the Baden Soda and Aniline Manufacturing Company.

Sections of tissue hardened in alcohol do not give satisfactory results, but fresh tissue hardened in Flemming's solution for twenty-four hours and then further hardened in alcohol gives sharp pictures.

Sections of tissue, hardened as above, are placed in a mixture of one part of a concentrated alcoholic solution of Victoria blue and four parts of water for twenty-four hours. The sections are then removed from the staining fluid, washed quickly in alcohol (five to ten seconds), drained of the superfluous fluid by placing them on a bit of filter paper for a few seconds, cleared in oil of bergamot, and mounted in Canada balsam.

Connective tissue and cells stain a faint green, nuclei a darker green, elastic fibres a light green, but darker than the other elements. In the specimens under the microscopes he had not succeeded in obtaining the exact shades described by the author. In his specimens the tint was bluish. This difference in color might be due to the grade of the dye employed, as he had found that the Baden Company manufacture three different shades. The dye used by him is known as the medium shade.

Herxheimer (*Fortsch. d. Med.*, iv., 1886, No. 24, p. 785) hardens fresh tissue in Müller's fluid, though good pictures may be obtained with tissues hardened in alcohol, picric acid, or Flemming's solution.

As a staining solution he uses the following mixture: 1 c.c. of hæmatoxylin (best obtained from Grübler in Leipsic), 20 c.c. of absolute alcohol, 20 c.c. of water, 1 c.c. of a saturated solution of lithium carbonate in water. Alum solutions of hæmatoxylin, Heidenhain's solution, or Weigert's solution may be used. The specimens shown were stained with Weigert's solution.

The sections, which should not be over 2 to 100 mm. thick, are placed in the staining solution for from three to five minutes. They are then removed and placed directly in a dish of the officinal solution of the chloride of iron for from five to twenty seconds. In this solution an iron lake is formed with the hæmatoxylin, and immediately afterward the decolorization takes place. Too prolonged action of the iron solution will remove the color from the finest fibres. After removing the sections from the iron solution, they are well washed in a large dish of water, when clouds of color will be given off from the sections. Then pass through alcohol twice, clear in oil of cloves, and mount in Canada balsam. The iron solution and the alcohol should be frequently renewed.

The elastic fibres stain a blue-black to a deep black color, and stand out sharp against the underlying connective tissue, which is stained more or less of a light gray, often running off into a bluish tint. Nuclei sometimes stain of a grayish tint.

VERTEBRAL CARIES—LAST CERVICAL AND FIRST SIX DORSAL—PARAPLEGIA—RECOVERY OF PARAPLEGIA—ENLARGEMENT OF RIGHT HEART—HEMORRHAGIC INFARCTION OF LUNGS—DEATH.

DR. JOHN F. RIDLON presented the spinal cord of a patient who died in St. Luke's Hospital on the 7th inst.

The history was as follows: Mary D——, six years of age, was admitted October 24, 1883, to the orthopædic service under the care of Dr. Newton M. Shaffer and himself. Both parents died of consumption. She had three healthy brothers, and two brothers died from causes unknown. She had four healthy sisters. Other hereditary history not known. The curve in upper dorsal spine was first noticed in January, 1881—six years ago. From that time the curve gradually increased in spite of treatment by a brace at one of the public institutions in this city for the treatment of cripples. On her admission to St. Luke's Hospital, three years and three months ago, her general condition was fairly good. There was a large kyphosis which involved the four first dorsal vertebræ. There was paraplegia to the following degree: She could not stand alone; there was very little voluntary motion in the lower extremities; and all the tendon reflexes of the lower extremities were greatly exaggerated. Sensation seemed normal. No bladder or rectal symptoms.

From that time, October 24, 1883, to June 29, 1885, there was no treatment except rest in bed. Meantime the paralysis of the lower extremities was complete—there was not the slightest control over a single muscle. From this time on, the same conservative treatment being pursued, there was a gradual and steady gain. On March 10, 1886, she was able to move the toes somewhat, flex the feet to a degree, and flex the legs on the thighs. On April 6th she walked about forty feet. Reflexes were reduced almost to normal. On April 14th Taylor's antero-posterior spinal support and chin-piece with Shaffer's ball-pivot joint was applied and the patient was allowed up. On April 16th, after being up two days, she seemed so unsteady on her feet that she was again put in bed, the brace being kept on without the chin-piece. On October 20th she was again allowed up for five minutes twice a day. December 1st she was able to walk alone the length of the ward and back. There was a slight exaggeration of the tendon-reflexes in the lower extremities. December 22d, allowed up half an hour twice daily. January 27, 1887, began to have difficulty in breathing. She was under the care of Dr. A. B. Ball till February 1st, and of Dr. F. P. Kinnicutt from that time till her death, at 3 A.M., February 8th.

Post-mortem examination by Dr. Frank Ferguson, February 8, 1887. Body emaciated. Rigor mortis slightly marked. Spinal curvature and projection forward of the breast. Diaphragm at the sixth rib on either side. Loose old adhesions generally distributed over both lungs. Tubercles at apex of left lung. Areas of hemorrhages of small size. Mucus and pus in the bronchial tubes. Old phthisis at apex of right lung. Numerous hemorrhages (infarctions) of considerable size in lower lobe of right lung. Heart was larger than normal. Left ventricle moderately dilated; its walls thin; its valves normal. Right ventricle enormously dilated; its walls thin; its valves normal; its muscular tissue showed fatty degeneration. Spleen normal in size, firm in consistency, dark in color; kidneys congested, firm in consistency, capsule not adherent, surface smooth, markings distinct. Both organs were alike. Mesenteric glands moderately increased in size. Stomach, pancreas, and gall-bladder normal. Liver: Peripheri of acini were anæmic and fatty. Urinary bladder normal. Caries of the spinal column involving the last—seventh—cervical and first five dorsal vertebræ. The angle of the curve was very sharp (so that the upper surface of the sixth dorsal and the under surface of the sixth cervical were not more than an inch and a half apart, and this space was filled in with a cheesy mass from the cord forward, there being but a thin shell of bone anteriorly). The cord was about half an inch in diameter, flat, and its gray substance was not distinguishable. Above and below the angle the spinal cord seemed normal.

[The specimen was referred to the Committee on Microscopy.]

Remarks.—Dr. Ridlon said that it was difficult to tell

at the beginning whether recovery from the paraplegia attending Pott's disease would occur within two months or three years, and he knew of no method of treatment which would enable one to answer this question. Is there any treatment more satisfactory than rest in bed and the support given by a fairly good fixation apparatus? He had used iodide of potassium, and had become convinced that it produces no effect upon the paraplegia, unless there be reason to believe that hereditary syphilis is present.

To the naked eye the gray matter in the specimen presented was apparently destroyed, but whether or not the nerve-fibres had been destroyed he was unable to say.

He would also ask if anyone had seen a case in which paraplegia was present and the kyphosis was in any other region than the upper dorsal.

Again, were we to expect dilatation of the right side of the heart as the result, in these cases, which would give rise to a pulmonary condition that would terminate life?

Dr. Van Santvoord referred to a case which he treated with the actual cautery, while an interne in Bellevue Hospital. The cautery was applied to relieve pain, but the paraplegia began to disappear at once, and after a time the girl recovered from the paralysis.

Dr. Ira Van Gieson remarked concerning restoration of function after destruction of nerve-tracts that a recent observer had experimented under Stricker's direction by removing a portion of the motor tract in dogs, and had found that function was restored in from three to six weeks. The conclusion was that the restoration of function occurred through collateral channels in the motor tracts injured or destroyed.

Dr. H. J. Boldt presented a specimen of

PERSISTENT BRONCHO-PNEUMONIA

removed from the body of a child nine months old that died with symptoms of meningitis. There had been nothing to direct attention to the chest, and the child had been healthy until the development of the meningitis.

The lower portion of the left lung was adherent to the chest-wall and had one cavity filled with pus. All the other organs were healthy, except the brain, which showed simple meningitis.

METRITIS—PERIMETRITIS—ENLARGED GLANDS.

Dr. Boldt presented the pelvic organs removed from the body of a woman, forty-nine years of age, who came under his observation on October 1st, last, when she claimed that she had enjoyed good health until a few months previously. About one year ago a small tumor was detected in the right inguinal region, which was regarded as an ovarian cyst. When Dr. Boldt first saw her the tumor had reached considerable size, and he advised an operation, but it was declined, and the patient died of exhaustion.

At the autopsy the uterus was found enlarged, its walls thickened, and the entrances to the Fallopian tubes were obliterated. On the right side there was a cyst that had been bound down by adhesions, and upon the top of it the tube could be distinctly traced. On the left side it was impossible to determine, positively, by gross examination, the presence of either the tube or ovary. The retroperitoneal glands were enlarged, and it was thought that they might be sarcomatous.

The case illustrated the importance of early operation for removal of ovarian cyst.

The specimen was referred to the Committee on Microscopy.

Dr. W. H. Porter presented a pair of lungs which illustrated

ACUTE ANTHRACOTIC PNEUMONIA

in connection with acute lobar pneumonia. He had seen four or five such cases, all occurring in workmen on the new aqueduct. The symptoms had been chill followed by moderate rise of temperature and continuation of febrile movement for a few days, and finally the symptoms all abated and the patients were about the wards of the hospital in a very comfortable condition, but died suddenly on the development of dyspnœa and pulmonary œdema.

The anthracotic part was apparently an acute development of this peculiar lesion. He had seen two or three cases in which this anthracotic condition of the lungs only was found, without evidence of inflammatory exudate into the air-vesicles. Whether or not the anthracosis predisposed to the occurrence of lobar pneumonia, he was unprepared to answer; it might be that these persons had the lobar pneumonia because of the exposure incident to their work.

The President remarked that this was an interesting class of cases, especially in connection with the new notions of the pathology of acute lobar pneumonia. Although the particular bacterium which causes this form of pneumonia has not been established, and it is not improbable that there may be several capable of causing it, the general impression is that there are micro-organisms which bear the relation of cause and effect to this disease; but it also remains that there are predisposing factors which are equally important, and perhaps there is a peculiar exposure that predisposes to acute lobar pneumonia. Here, however, is another cause, apparently, and the acute irritation produced by the little foreign particles may be a predisposing factor. In that respect, especially, the class of cases mentioned by Dr. Porter becomes one of great interest.

Dr. Porter had thought that the acute lobar pneumonia in these cases was the result of the acute anthracosis, without reference to bacilli.

DILATED URETERS.

Dr. J. S. Thacher presented two specimens. The *first* was found at autopsy in the body of a woman. The cause of the dilatation was a collection of small polypoid outgrowths from the mucous membrane in the middle part of the ureter and over a space an inch or an inch and a half long. The dilatation of the pelvis of the kidney was not extreme. The little growths, which were numerous, were not fibroid in character, but rather cystic containing granular matter and squamous epithelia.

The *second* specimen was from the body of a fœtus six months old, and the ureters were dilated to about the size of the thigh of the embryo at that period. The pelves of the kidneys were slightly dilated. The bladder was enlarged, its walls hypertrophied and quite firmly attached to the anterior wall of the abdomen. He was unable to find any cause for the retention of the urine.

Dr. Ira Van Gieson presented a specimen which showed:

A FOREIGN BODY IN THE EYE—PANOPHTHALMITIS FROM INJURY.

Three weeks before enucleation the patient was struck by a twig, penetrating the sclera about one centimetre posterior to the sclero-corneal junction and passing through the globe to the diagonally opposite ciliary body. The foreign body was thorn-shaped, rather sharply pointed, and measured one and a half centimetres in length.

Microscopical Examination.—The foreign body was surrounded by a zone of granulation tissue. The lens was absent and the collapsed capsule surrounding a small mass of new connective tissue occupied approximately its normal position. Just posterior to the foreign body was the detached retina. Between the detached retina and the optic nerve entrance was a mass of extravasated blood. The anterior chamber was filled with pus. The iris and ciliary body were infiltrated with pus-cells.

Dr. R. Van Santvoord presented a specimen of

POSSIBLE TUBERCULAR DISEASE OF THE PHARYNX

removed from the body of a child eighteen months and nineteen days old. Five months ago it was noticed to

suffering from irregular attacks of fever, with cough and rales in the chest, and that it was emaciating somewhat. There was some difficulty in swallowing at one time, but nothing special to explain it was found. The child died four days ago. At the autopsy there were found two ulcers, one in each pyramidal pouch, and about an inch in length. There were also ulcers on either side of the external surface of the epiglottis, about one-fourth of an inch wide. On the posterior wall of the pharynx were irregular ulcers, and one small point of ulceration in the left tonsil. The process did not extend into the nose. The bronchial glands were enlarged, but were not cheesy. The upper and the lower lobes of the right lung were solidified largely by broncho-pneumonia, and scattered through the consolidation were yellowish spots, which which were apparantly tubercular nodules that were becoming cheesy. Nothing especially noticeable was found in the abdominal contents.

About fourteen months ago he presented a similar specimen, and in that case difficulty in swallowing was noticed only four days before the death of the child. The lesion had been described as occurring in adults, but whether it was frequent or not in children he was not prepared to say. The specimen was referred to the Committee on Microscopy.

Dr. RIDLON had been led to believe, from clinical observation, that lesions of this character which it had been customary to regard as tubercular occurred without any hereditary history of tubercular disease, but where there was a positive history of syphilis.

Dr. A. P. DUDLEY presented a specimen of

CANCER OF THE UTERUS

that developed upon the site of an old cervical laceration in a woman forty-eight years of age, who had borne eight children, and had been attended by a midwife. She was not aware that laceration had occurred. The malignant disease was quite far advanced, and was removed by the vaginal operation. Considerable difficulty was experienced in the operation because of the attachment to the uterus of two fibroids, and the mass was finally removed in sections by means of the elastic ligature.

The patient was under the influence of ether nearly three hours. She did fairly well until the following morning, when it was found that there was suppression of urine, and death occurred thirty-eight hours afterward.

Dr. W. H. PORTER made the autopsy, and found that the entire peritoneal cavity was absolutely free from suppuration. The kidneys were in a condition of rapidly advancing acute parenchymatous metamorphosis, and the liver was in the same condition, and also cirrhotic. He had seen twelve or thirteen similar cases, in which this acute disease of the kidneys had developed after severe surgical operations, while everything about the site of the operation indicated a reparative process, but the symptoms were those ordinarily ascribed to septicæmia. In these cases the urine contained neither casts nor albumen before the operation, but that which was in the bladder at the time the autopsy was made contained both. He had therefore been led to believe that, in a large number of cases, what had been called septic symptoms had been due to renal changes. He regarded prolonged cauterization as unsafe, and, if there was evidence of renal disease, as contraindicated.

Dr. DUDLEY also presented

A SLOUGHING FIBROID

removed from a patient, aged forty-three, who had borne ten children. She had suffered from pain and hemorrhage for nearly a year before he saw her. There was double laceration of the cervix. The fibroid was removed by means of the spoon-saw from the anterior wall of the uterus, close to the fundus.

The patient had intermittent heart-beat, and also an organic murmur, besides about ten per cent. of albumen in the urine, which cleared up under the influence of citrate of potash and infusion of digitalis.

This patient took a small quantity of ether without unfavorable symptoms, and he intended to again administer it and subject her to an operation for repair of her perineum.

UTERINE POLYPUS, WITH ENLARGEMENT OF THE ORGAN, TWO YEARS AFTER THE MENOPAUSE.

Dr. DUDLEY also presented a small polypus removed from the anterior wall of the body of the uterus of a woman, aged fifty-four, who had been past the menopause two years. The cervix was really a senile one, and he divided it sufficiently to enable him to dilate and remove the polypus that he had previously recognized lying within the cavity of the cervix. The uterus measured four inches in depth.

Dr. BOLDT referred to three cases in which acute renal changes were found, while the symptoms were supposed to be due to septicæmia. He also recalled two cases of polypus occurring after the menopause.

The Society then went into executive session.

NEW YORK ACADEMY OF MEDICINE.

Stated Meeting, March 17, 1887.

A. JACOBI, M.D., PRESIDENT, IN THE CHAIR.

THE PRESIDENT acknowledged the receipt of

A PORTRAIT OF THE LATE GUNNING S. BEDFORD, M.D.,

presented to the Academy by the family of the deceased, and read extracts from a printed memoir giving a brief biographical sketch of the distinguished Fellow.

On motion by Dr. J. A. ANDREWS, the thanks of the Academy were given to the family of the late Dr. Bedford for their beautiful and highly acceptable gift.

Dr. T. MITCHELL PRUDDEN then read a paper (see p. 341) on

BACTERIA IN ICE, AND THEIR RELATIONS TO DISEASE, WITH SPECIAL REFERENCE TO THE ICE-SUPPLY OF NEW YORK CITY—AN EXPERIMENTAL STUDY.

THE PRESIDENT invited Dr. FRANCIS DELAFIELD to open the discussion, who said it seemed to him that the paper was one which called, not for discussion, but for commendation.

Its author had presented, not theories, but facts—facts so novel in their character, so carefully observed, and so clearly stated, and the deductions drawn from these facts had been made with so much conservatism and so little disposition to give more weight to them than they really deserved, that, while he found in the paper matter for the most earnest consideration, he could find concerning it nothing more to say.

Mr. BRENNEMANN, on invitation, continued the discussion, and said that his investigations had been in the direction of chemical examinations of water. But it seemed to him that the author of the paper had thrown a flood of light upon the question of the contamination of ice. The possibility of the contamination of ice was a question that had often been discussed, yet in scarcely any of the annual health-reports had it been dwelt upon.

He had been specially interested in the determination which the author of the paper had made with reference to the resistance offered by specific bacteria to freezing; and he had been led to think of that peculiar instance, the epidemic at Plymouth, in which there had never been afforded a better demonstration of the resistance of the typhoid-fever bacillus to the influence of cold than was seen in the region ascribed to the origin of the disease.

It was certain that the points brought out in the paper were, many of them, the data for which investigators had been waiting in the discussion of the question of the production of disease by ice.

The question of the relation of biological tests to the purity of drinking-water was one that had been watched with interest by chemists; and as these had slowly come under their attention, there had been great hope that they would add the element of confirmation to chemical analysis of water. But he thought it must be concluded that, at the present time, it was impossible to fix the limit concerning the number of bacteria which would represent the limit of safety with regard to water—the absolute number of bacteria found by culture-experiments. There was no line of agreement, at present, between the chemical and the biological tests, concerning number, and he regarded it as impossible to say what interpretation should be given to this result.

But when it came to the question of quality by filtration, as compared with water, for example, furnished by artesian sources, then we have a valuable test in biology that has led to the filtration-process, upon which Frankland has placed great reliance. From daily examinations, there was reason to believe that, demonstrated by chemical and biological study, the *Croton water* should be regarded as a candidate for improvement.

The President congratulated the Academy and himself that they had been honored with the paper by Dr. Prudden. He then said that he had been looking up the literature of the subject, and had found it to be very limited, of which the following were extracts:

Dr. Miguel published researches on the vitality of bacteria in mountain-air and under the influence of cold temperature in the *Semaine Médicale*. He quoted the extract found in the *Centralblatt für Allg. Gesundheitspflege*, 1884, iii., 316:

"Cold was not particularly a germicide. In a block of ice weighing fifty kilograms (one hundred pounds), taken from the Lake de Tour, Miguel found, after an interval of eleven months, seven hundred and fifty thousand living bacteria. Atmospheric microbes resisted the effect of a cold temperature of 100° C. (=148° F.), to which they were exposed through thirty-six hours. This intensely cold temperature was produced by the rapid evaporation of liquid sulphuric acid and liquid nitrous oxydol. But their resuscitation was slow, and took place on culture-fluids after three days only. In ten cubic metres of air he also found, at an altitude of four to seven thousand metres, no bacteria; on the Thun Lake, five hundred and sixty metres, 8 bacteria; near Hôtel Bellevue, five hundred metres, 21 bacteria; in a room of the hotel, 600 bacteria; in the Park of Montsouris, 7,600 bacteria; in Paris, Rue Rivoli, 55,000 bacteria."

From these researches he should conclude that if ice were to be free from bacteria it ought to be secured from altitudes of at least fifteen hundred feet.

Freudenreich has arrived at similar results, which he published in *Revue Scient.*, ii., 384, and which the President quoted from *d. Viertej. f. öff. Ges.*, xvii., supplement, 17.

Dr. J. A. Andrews said that while making some observations he found that pus, when frozen, was viable at the end of *three* weeks, as successful inoculations could be made with it in the cornea of rabbits, where it produced the characteristic bacteria of suppuration. Still later, that the staphylococcus was viable after the freezing had been maintained *seven* weeks.

The Academy then adjourned.

Emmenagogue Action of Oxalic Acid.—Dr. Poulet (*Gazette Hebdomadaire*, 1886, No. 20) extols oxalic acid as the best of all emmenagogues. It does not, however, he admits, abolish the pain experienced by many women in the discharge of the menstrual function, and it is, of course, inoperative in amenorrhœa consequent upon organic disease. The dose in which he prescribes it is one teaspoonful every hour of a mixture containing thirty grains of oxalic acid, about six ounces of water, and two ounces of syrup of orange-peel.

THE PRACTITIONERS' SOCIETY OF NEW YORK.

Stated Meeting, March 4, 1887.

George F. Shrady, M.D., President, in the Chair.

Dr. George L. Peabody reported a case of

CYSTIC SARCOMA OF THE CEREBELLUM, WITH SECONDARY HYDROCEPHALUS, WITH THE SPECIMEN.

J. R——, fourteen years of age, a native of the United States, came under my care in the New York Hospital on June 7, 1886. There was no family history. He denies rheumatic, malarial, specific, nephritic, and alcoholic histories. He had measles at two years of age. He has always been a bright, healthy child. He was born with a rather large head. Two years ago he was laid up for two months with much headache and vomiting, and lost his appetite. He recovered from this, and was well until eight months ago, when he commenced to have much headache and vomiting. His eyes were very sensitive to light, and gradually he commenced to lose his eyesight, and at the end of two months, he had become totally blind. He has remained so ever since. In the last three weeks he has had several chills, but no fever, and no sweating. Two months ago he commenced to pass urine involuntarily, and has done this occasionally ever since. He has lost flesh and strength. His bowels have been constipated all the time. In the last few days, he has been quite stupid.

On admission, 8.30 P.M.—Temperature, 99.6° F.; respiration, 12; pulse, 96. He is poorly nourished; there is no œdema. Both pupils are dilated; neither reacts to light; he is totally blind. Patellar and plantar reflexes are slightly exaggerated. There is a little fluid in the right chest posteriorly. He is very stupid, has continually a listless expression. The head is large, measuring twenty-four inches in circumference; the lower part of face is heavy and dull. There is almost a total abolition of senses of smell and taste; pulse is of high tension, heart fairly forcible. His urine is high colored, neutral, 1.028, no albumen, no casts, phosphates in solution.

June 8th.—Temperature and pulse normal, respiration 13 and 14 to the minute. He passes urine and fæces involuntarily. Lies in a lethargic state all the time, is able to talk when aroused, but answers questions automatically; he apparently has no reasoning power whatever; he sleeps a great part of the time.

June 9th.—His respirations vary from 12 to 14.

June 13th.—Ordered pot. iodide, gr. x. t. i. d.

June 17th.—Vomited twice to-day.

June 25th.—Condition much the same; perhaps a little brighter.

June 27th.—Patient vomited twice to-day, without apparent cause. His temperature this evening is 100.4°.

June 29th.—Ordered iodide, gr. xxx. t.i.d. For last two days has been more stupid. From time to time convulsive twitchings of face and extremities are noticed. He vomited once to-day.

June 30th.—Vomited once. Evening temperature, 101.6°; respiration, 18; pulse, 110.

July 1st.—Ophthalmoscopic examination of eyes shows veins of retina enlarged and engorged with blood; the vessels of optic nerve almost obliterated. Temperature, 99.8°; respiration, 16; pulse, 105.

July 2d.—He has become very stupid. His gums are spongy. To-day he had a slight unilateral convulsion of right side; respiration was suspended during and after it for some moments. His face was much congested; the temperature of right side was higher than that of left. Temperature, 100.4 to 100.6°; respiratiom, 18 to 22; pulse, 116 to 94.

July 3d.—Temperature, 100 to 100.2°; respiration, 17 to 9; pulse, 112 to 106. Iodide decreased to gr. xv.

July 4th.—Temperature, 100.4°; pulse, 102 to 110.

His respiration varies from 6 to 12 per minute. It is somewhat peculiar; two deep inspirations are taken, then a period of rest varying from twenty to thirty seconds, then two inspirations again, quite rhythmically.

July 9th.—Pot. iodide discontinued. Urine reddish yellow, acid, 1.022, no albumen, few hyaline casts.

July 10th.—Ordered inunction of oleate of mercury daily.

July 18th.—Ordered gums painted with tr. benzoin daily, and inunctions of oleate of mercury discontinued. There is total abolition of senses of smell and taste.

August 6th.—Patient has become much brighter since last note. This morning he had a slight convulsion, with no after-effects.

August 16th.—Urine yellow, acid, 1.008, no albumen, negative microscopically.

September 12th.—His condition is about the same. He is very constipated urine and fæces are passed involuntarily. There is some slight rigidity of the arms; pupils are still widely dilated and do not react, his gums are very spongy, almost concealing the teeth. He takes only milk, but takes about sixty ounces of this every day. From time to time he has convulsions of both arms and legs, with no apparent after-effects. His respirations are still infrequent, varying from 6 to 12 per minute. He answers questions in the same slow methodical way. If asked whether it is night or day, he knows, but is unable to give any reason for his opinion.

September 22d.—Urine light yellow, neutral, 1.016, no albumen, negative microscopically.

October 10th.—Since last note he has become more stupid, does not now answer questions. His pupils are now both contracted and do not react. His convulsions are more frequent than formerly. He is hardly able to swallow milk. Pills when given to him dissolve in his mouth without any attempt on his part to swallow them. His face is slightly cyanotic, and there are numerous venous stigmata on it.

October 14th.—Urine amber, acid, 1.026, no albumen, many hyaline casts. He has failed very perceptibly since last note. Pupils still contracted. For the last two weeks he has been very hyperæsthetic, crying out whenever touched. His arms are flexed and rigid, and when an attempt is made to straighten them, he cries aloud. This morning his temperature is 104.4°.

October 15th.—Temperature, 106°; respiration, 16; pulse, 84. He continued to fail, and at 12.30 P.M., he died.

The *autopsy* was made one hour and a half after death. Body is emaciated. Rigor mortis is absent. There is slight œdema of both lower extremities. There are two hemorrhagic areas in the skin just below the left inner condyle.

Head: The calvaria is very thin, its greatest circumference is twenty-two inches. There is a small normal clot in the longitudinal sinus. The convolutions over the vertex are everywhere distinctly flattened. The cavity of the left lateral ventricle is immensely increased in size. The right lateral ventricle in same condition. The third and fourth ventricles are also dilated. The right hemisphere of the cerebellum is greatly increased in size; its outer half seems on the surface to contain no cerebellar tissue at all, having the look and feeling of dense connective tissue; the inner half shows cerebellar convolutions on its surface. The entire right hemisphere is converted into a cyst which contains brownish serum. The wall of the cyst has an average thickness of about one centimetre. Its external measurements are 7 ctm. by 5 ctm. Its capacity is 33 c.c. The cyst is egg-shaped, its smaller end being directed toward the fourth ventricle. The left hemisphere of cerebellum is smaller than normal. Cyst presses upon roof of fourth ventricle, and upon its right lateral wall.

Peritoneum, diaphragm, and thorax normal.

Heart rather small, otherwise normal.

Lungs: Normal; bronchial glands are quite enlarged.

Kidneys: Capsules not adherent, surface smooth; organs apparently normal.

The mucous membrane of the stomach is distinctly thickened toward the pylorus.

Duodenum: The orifice of the common duct is pervious.

Intestines: The spleen, pancreas, liver, and gall-bladder normal. Pigmentation and depression at centres of acini of liver; anæmia and fat at their peripheries.

Urine found to contain no sugar.

By *microscopic examination* the fibrous-looking walls of cystic tumor is found to consist of small round- and spindle-cells in a rather abundant fibrous stroma which does not contain many blood-vessels, and in which are numerous aggregations of young inflammatory corpuscles and of pigment granules.

Dr. Peabody exhibited sections of the cyst-wall under the microscope, which showed the structure to be as he had described it.

He asked the impression of the members as to whether the tumor of the cerebellum by its pressure upon the roof and right wall of the fourth ventricle could have caused the dilatation of the general ventricular cavity of the brain. He believed that it was admitted by pathologists that anything which interferes with the return of venous blood from the choroid plexuses, or prevents the escape of serum from the ventricles, can cause secondary hydrocephalus. But the subject of the communication between the ventricular cavity and the outer surface of the brain was one upon which anatomists had not yet entirely agreed, and he therefore felt that he was not warranted in drawing positive conclusions as to the sequence of the lesions in the present case.

He regretted that the boy had come under observation so late that no study of his case could aid in settling this point with certainty.

Dr. A. H. Smith asked if there was not room for the supposition that the hydrocephalus was in existence when the sarcoma developed as a secondary disease.

Dr. Peabody said that such a possibility could not be denied.

Dr. W. H. Draper remarked that internal hydrocephalus might exist for many years without giving rise to symptoms.

Dr. Robinson asked how it was to be explained that in such cases, those of pressure on the fourth ventricle, sugar was sometimes present in the urine and sometimes absent; but, generally, albumen is not found, although, physiologically, its presence might be expected.

Dr. E. G. Loring was inclined to think that the shape of the head existed prior to the growth of the tumor in the cerebellum: for the child should have been blind almost from birth if the shape of the head was due to the tumor. Choked disk seldom is present in ordinary hydrocephalus where the sutures yield, no matter how great the accumulation of the fluid is. He thought that the child was hydrocephalic from birth, and that the sarcoma was a secondary occurrence.

Dr. Peabody also reported a case of

DOUBLE OVARIAN CARCINOMA IN A PREGNANT WOMAN, WITH SPECIMEN.

F. B——, thirty-four years of age, a native of Russia, married, and of no occupation, was admitted into the New York Hospital on June 27, 1884. She speaks a very imperfect German, and the only facts that could be learned from her were: That she had had a severe cough for more than three months; had spat up blood; had severe pain in the heart for two months, with great shortness of breath of late. She says she has been pregnant for at least six months.

On admission.—Patient is very poorly nourished. She is cachectic and sallow. She has the appearance of a woman of fifty years of age. There is marked œdema of the feet. Patient suffers greatly from dyspnœa, and cries out loudly with pain, which she refers to her chest.

The veins of the face and neck are turgid. At every inspiration there is retraction of the second and third intercostal spaces of the left side. Her pulse is of fair quality, but rapid.

Physical examination. — Anteriorly there is unequal expansion of the two chests; the right being more limited in its action.

On the right side there were roughened breathing, with dulness on percussion, and moist râles and ronchi.

On the left side respiration is exaggerated.

Posteriorly, on the right side, there is dulness, with tubular respiration.

On both sides there are numerous fine râles. The abdomen is protuberant and tense, and occupied by an ovoid tumor extending from the symphysis pubis to halfway between the umbilicus and ensiform cartilage. No uterine souffle nor fœtal heart-beat can be distinguished.

Ordered: Tr. digitalis, ℥. xv.; and whiskey, ℥ ss. q. three hours.

June 28th.—Temperature, 100.6° F.; respiration, 48; pulse, 148. Patient remained in same condition as on admission. She complained loudly at times of pain in the chest, and at several times suffered from cardiac syncope. Opium and stimulants relieved both those symptoms; but she gradually became weaker, and at 2.10 P.M. she died, on the day after her admission to the hospital.

The *autopsy* was made fifty minutes after death.

Inspection: Body poorly nourished. Rigor mortis absent; marked œdema of both lower extremities, more especially the left. Breasts are large; veins are prominent. Abdomen protuberant. There is a papilloma attached to the left labium magus. The uterus extends about three inches above the umbilicus. Both ovaries are about equally enlarged, lobulated, apparently solid. Vessels on the surface are distended. Ovaries measure 16 × 13 × 8 ctm. Their surfaces are somewhat irregular, but not very rough or nodular. The right ovary lies in the true pelvis. The left ovary lies partly in the pelvis and partly in the iliac region.

Diaphragm: Right side, fifth rib; left side, fifth space.

Thorax: The right pleural cavity contains a litre of brownish serum. The right pleura is studded by firm, white masses, cartilaginous in feel, some of them with caseous centres, varying in size from a millet-seed to a green pea. On the left side are old adhesions below the apex. The pleura contains very few such nodules as described on the right side. There is no fluid on the left side.

Heart: The heart is rather small, the valves are competent, the muscular tissue is flabby.

Lungs: The bronchial glands of both lungs are enlarged, and contain numerous grayish masses. The mucous membrane of the bronchi throughout is thickened. Both organs are alike.

Spleen: The spleen is large and tough, measuring 17 × 9 × 4¼ ctm.

Stomach: The stomach is normal.

Bile-duct: The common bile-duct is pervious.

Intestines: The intestines are normal.

Kidneys: The left kidney-capsule not adherent; surface is smooth. There are numerous whitish masses, from the size of a pin's head to that of a green pea, surrounded by a zone of congestion, in the cortex of the organ. Markings are distinct. The right kidney in the same condition, but it contains fewer of the whitish masses found in the left kidney. There are several of these masses on the surface of the organ.

Liver: Centres of acini are pigmented; the peripheries are anæmic.

Uterus: The uterus is occupied by a fœtus four pounds and eleven ounces in weight, well developed, and partially macerated. The nails of fingers and toes are well formed. The amniotic fluid is brownish in color. The os is patulous and admits three fingers; the head of the child is presenting. On section, the large tumors occupying the site of the ovaries present areas of cheesy degeneration, surrounded by pinkish, fleshy tissue of firm consistency, and bountifully supplied with blood.

Microscopic examination.—Kidneys: Examined fresh on section, are seen to contain a great deal of fat in the convoluted tubes. After hardening pieces in alcohol, sections through the whitish nodules are found to reveal ordinary encephaloid cancer.

Ovaries: Numerous sections from various places in both ovaries reveal the ordinary tissue of encephaloid carcinoma.

Liver: One similar nodule is found.

Lungs: Both lungs and bronchial glands show extensive invasion by similar growth.

Dr. Peabody further said that primary cancer of the ovary was well recognized, though infrequent; and that cancer was present in *both* ovaries in a considerable proportion of the recorded cases; but that, so far as he was aware, this case was unique, in that it showed the coincidence of pregnancy with cancer of both ovaries.

Ovarian cancer was usually, as in this case, of the encephaloid variety, and generally of rapid growth.

Dr. Peabody showed sections under the microscope from both ovaries, lungs, bronchial glands, liver, and kidneys, in all of which the carcinoma tissue was very well marked.

DR. J. B. HUNTER remarked that the specimen and case were especially interesting, because it was evident that some portion of ovarian tissue was competent to reproduce as late as nine months before death, while microscopical examination, as far as it had been carried, had failed to detect any ovarian tissue remaining. He had never met with a case of ovarian carcinoma in connection with pregnancy.

FACIAL ERYSIPELAS; IS IT CONTAGIOUS?

DR. W. H. DRAPER mentioned a case of death from erysipelas of the head and face, which ran a more rapid course than any he had ever seen.

A man was admitted to the New York Hospital, a week ago, who was found to have chronic diffuse nephritis, and who suffered chiefly from the characteristic uræmic dyspnœa. He was relieved of his urgent symptoms, and was apparently doing very well, when he became very restless during the night, and was found, several times, to have thrown his head through between the bars at the head of the iron bedstead, from which position he had to be released. Night before last he was found with his head in that position, and when released it was discovered that he had bruised his left eye rather severely, and that there was an abrasion of the skin. When the house-physician saw him, in the morning, there was an erysipelatous blush about the wound, and this spread with such rapidity that when Dr. Draper saw the patient, in the afternoon, the entire left side of the face presented the characteristic appearance of acute erysipelatous inflammation, and it had also extended upon the scalp, over the left ear, and had invaded slightly the right side of the face. His breathing was comatose, pulse rapid, and temperature high. By midnight the entire face was involved, and also the scalp, and he died at two o'clock in the morning, the entire course of the disease continuing scarcely more than twenty-four hours.

There had been *seven* cases of erysipelas in this ward since January 1st, having been introduced by a case sent over from the surgical to the medical side.

A man died suddenly last week with heart disease, who had severe erysipelas from which he was convalescent. The ward had been closed and was being disinfected.

Dr. Draper mentioned these cases because he thought that medical cases of erysipelatous inflammation of the face—idiopathic erysipelas—were, by some, regarded as non-contagious. Of course, the case first mentioned was one of traumatic erysipelas.

DR. GEORGE L. PEABODY remarked that there had been nine cases of erysipelas following lobar pneumonia

in the hospital since last January. In one case there was secondary meningitis and death.

Dr. Draper said that he had a case in the female ward where the facial erysipelas followed pneumonia, occurring first on one side and then upon the other. Now she has purpura, and his suspicion was that she might have ulcerative endocarditis.

Dr. Beverley Robinson said that several cases of erysipelas had recently occurred in the medical wards of St. Luke's Hospital. He would mention one case that had special features of interest. A man, fifty-five years of age, who had been in the New York Hospital previously, gave the history of a small cerebral hemorrhage on the right side. His general condition was such that he did not require special attention, when he developed glandular swelling of the neck under the jaw on either side, without reddening of the skin. There had been in the ward a case of erysipelas, but, as there was no redness of the skin, Dr. Robinson did not regard this as a case of erysipelas at that time, nor did he regard it as a case of mumps. The swelling increased somewhat, was considerably painful, and at the end of twenty-four or forty-eight hours the patient died suddenly.

The autopsy showed that the glands underneath the jaw on either side, and about the larynx and trachea, were infiltrated with pus inspissated in character. In the larynx there was a certain amount of œdema, and there was a ragged ulcer that presented none of the appearances of tubercle or syphilis, and there was no evidence of constitutional syphilis. From the suddenness of the death, and the peculiar infiltration of the glands, without redness of the skin, he regarded it as a case of Ludwig's angina. Dr. Ferguson, who made the post-mortem examination, was inclined to regard it as a case of erysipelatous inflammation, and thought that the ulcer was the door of its entrance. He would ask whether or not the idea of erysipelas should be eliminated from the case, and whether Ludwig's disease was anything more than an erysipelatous inflammation of the subcutaneous cellular tissue in that locality.

Dr. Kinnicutt said that Dr. Robinson's case accorded very well with Ludwig's angina, which was believed to be an idiopathic infectious cellulitis.

Dr. A. H. Smith asked Dr. Draper if there was any connection between the kidney disease in his case and the erysipelas. He had seen very severe erysipelas in diabetics.

Dr. Draper thought that the occurrence of erysipelas in the course of chronic Bright's disease was common; and, until the disease was proved to be a germ disease, it was regarded as one of the secondary inflammations liable to occur with the chronic renal affection, the same as pericarditis, pleurisy, etc.

But of late he had been disposed to regard the occurrence of erysipelas in these cases as due rather to the fact that persons having chronic Bright's disease also had an exaggerated susceptibility for the reception of the erysipelatous germ; and so he thought the occurrence of severe forms of erysipelas in the course of diabetes could be explained; the tissues are in the condition which renders them an easy prey to the ravages of the germ.

Dr. R. F. Weir, in connection with the remarks made by Dr. Peabody and Dr. Draper, asked whether it was not proper to put on record

A PROTEST AGAINST THE RETENTION OF ERYSIPELATOUS PATIENTS IN THE WARDS

of hospitals for treatment. He thought that in their own institution it was a decided fault; that it was wrong that such patients should be treated in either a medical or surgical ward.

Dr. Draper agreed with Dr. Weir, and believed that erysipelas is always a germ disease, whether it comes into the hospital or is developed in the wards within the hospital, and that it should be treated the same as when it occurs with the distinct history of traumatism.

Dr. E. G. Loring asked if the germs were not in the hospitals when the patients were carried in.

Dr. Draper said that a great many cases of erysipelas were brought in.

Dr. Loring: But does the development of the disease depend upon the presence of germs within the hospital or upon the presence of conditions in the patient which will allow them to grow upon him?

Dr. Draper thought that the latter was probably true.

Dr. Loring said that he should therefore think that all the patients in the wards were just as much exposed while in the hospital as after the occurrence of a case of erysipelas.

Dr. Weir believed that facial erysipelas could be considered as a contagious disease, whether it occurred idiopathically or otherwise; but he also thought that very nearly all these cases were traumatic, starting from only very slight abrasions perhaps.

Dr. Peabody asked if anyone had seen erysipelas develop in a surgical case from a so-called idiopathic case; in other words, has phlegmonous erysipelas been distinctly known to follow infection by facial erysipelas?

Dr. Weir had seen such transmission in the old New York Hospital, and yet the evidence was deficient from the fact that it could not be said positively whether or not a different germ acted on the second case. Still, he would feel that his patients with open wounds were in an unsafe position with a case of facial erysipelas in the same ward.

Dr. Robinson said that in his ward there were two or three cases of facial erysipelas, and the man had the pathological conditions that were declared to be erysipelatous in character. The query then arises, Can we have erysipelatous inflammation of the cellular tissue and involvement of glands and formation of pus without reddening of the skin, or is Ludwig's disease anything more than erysipelas affecting the tissues beneath the skin?

Dr. E. D. Hudson asked, How does facial erysipelas infect a ward? Such cases would seem to indicate that the disease can be prevented from producing infection; and some do say so, and claim that it is a localized inflamed area of the skin at first, from which it extends through the medium of the lymphatics. So if the skin is washed with germ-destroying solutions, the disease will be arrested and the power of infection removed.

Dr. Peabody said that there seemed to be in erysipelas a disease which affected the whole system, but at the same time he must say that, practically, he had seen quite a large number of cases in wards in hospitals without the disease spreading to anyone or becoming infectious in any way. He did not think, however, that this could be used as an argument for non-contagiousness.

Dr. Weir mentioned a case that might shed a little light on the subject. He removed glands from the neck and from the axilla of a patient, and erysipelas appeared in the lower wound, the upper wound remaining entirely uninfected. That would show that the disease is a rather local affection.

Dr. Draper's experience accorded with Dr. Peabody's with regard to the spread of erysipelas in medical wards. He could not recall an instance in which it had spread either to nurse or to other patients. But he knew that there were well-authenticated cases in which patients sick with erysipelas had communicated erysipelas to their attendants.

The remark of Dr. Peabody, concerning the occurrence of erysipelas in patients who had had pneumonia, was very interesting in view of the fact that the clinical history of facial erysipelas is strikingly like that of pneumonia, as regards the febrile portion. It lasts about the same length of time and defervescence takes place suddenly, as in pneumonia.

Army and Navy News.

Official List of Changes in the Stations and Duties of Officers serving in the Medical Department, United States Army, from March 13 to March 19, 1887.

GRAY, WILLIAM W., Captain and Assistant Surgeon. Leave of absence further extended two months. S. O. 62, A. G. O., March 17, 1887.

CARTER, WILLIAM F., Captain and Assistant Surgeon. Leave of absence extended four months, on Surgeon's certificate of disability. S. O. 57, A. G. O., March 11, 1887.

POINDEXTER, JEFFERSON D., First Lieutenant and Assistant Surgeon (recently appointed). Ordered for temporary duty at United States Military Academy, West Point, N. Y., relieving Captain Richard W. Johnson, Assistant Surgeon, who will return to his proper station (Fort Adams, Rhode Island). S. O. 62, A. G. O., March 17, 1887.

Official List of Changes in the Medical Corps of the United States Navy for the week ending March 19, 1887.

PARKER, J. B., First Surgeon. Ordered to the United States Steamship Ossipee.

SIEGFRIED, C. A., Second Surgeon. Ordered to Baltimore, Md., on special duty.

HUGG, JOSEPH, Third Surgeon. Placed on Retired List, March 17, 1887.

Medical Items.

CONTAGIOUS DISEASES—WEEKLY STATEMENT.—Report of cases and deaths from contagious diseases reported to the Sanitary Bureau, Health Department, for the week ending March 19, 1887:

	Cases.	Deaths.
Typhus fever	0	0
Typhoid fever	5	4
Scarlet fever	44	11
Cerebro-spinal meningitis	4	4
Measles	177	29
Diphtheria	108	57
Small-pox	14	1
Yellow fever	0	0

QUACKING SOUNDS IN THE EAR.—Dr. W. S. Parker, of Piqua, O., writes: "In THE MEDICAL RECORD of August 2, 1884, I reported a case of 'quacking sounds in the ear.' To-day, at noon, the subject of the report was taken suddenly with a violent pain in the right side of the head, within three minutes she was unconscious, and in twenty minutes was dead. Being in the immediate neighborhood I saw her at once, and found the following conditions: Stertorous breathing, feeble pulse, protruded tongue, and cold and blue extremities. The right pupil was dilated, while the left was contracted and did not respond to light. The patient had been in her usual excellent health. In the light of results, I am of the opinion that it was a case of ruptured aneurism, and that the sounds were due to the presence of the aneurism."

THE PROPER WEIGHT OF MAN.—Professor Huxley asserts that the proper weight of man is 154 pounds, made up as follows: Muscles and their appurtenances, 68 pounds; skeleton, 24; skin, 10½; fat, 28; hair, 3; thoracic viscera, 3½; abdominal viscera, 11; blood which would drain from the body, 7. The heart of such a man should beat 75 times a minute, and he should breathe 15 times a minute. In 24 hours he should vitiate 1,750 cubic feet of pure air to the extent of one per cent. A man, therefore, of the weight mentioned, should have 800 cubic feet of well-ventilated space. He should throw off by the skin 18 ounces of water, 300 grains of solid matter, and 400 grains of carbonic acid, every 24 hours; and his total loss during that period would be 6 pounds of water, and a little more than 2 pounds of other matter.—*The Hospital.*

THE EAST INDIA CONSUMPTION CURE.—Dr. James S. Cooley writes that the following is the recipe for a "consumption cure" which has enjoyed some popular reputation: Ext. Asiatic cannabis sativa, 2 oz.; ext. Asiatic hashish, 3 oz.; verbena hastata, 2 dr.; ext. diosma, 3 dr.; powdered cinchona bark, 2 oz.; ext. blood-root, 3 oz.; mullen, 2 dr.; loaf sugar, 1 lb.; rum or gin, 8 oz.; water, 24 oz. The writer sent the formula to Dr. Squibb, who replied that there were three of the ingredients with which he was not acquainted, but that it would be impossible to make a fine powder of the others, as the formula directed. The proprietor, who advertised his remedy—in a religious journal, of course—promised to send the ingredients in proper form for $3.

A NEW COLLODION.—The *Journal de Médecine* publishes a notice on a new collodion which is antiseptic and facilitates cicatrization. This collodion does not cause inflammation, and may be substituted for collodion containing gun-cotton in treating wounds and bruises. Like traumatacene, it is efficacious in relieving neuralgic pains, acute or chronic rheumatism. The affected parts should be sponged with it every twenty-four hours, and in serous cases every six hours. If strips of linen or silk be soaked with this collodion an excellent plaster is obtained, which equals that prepared with ichthyocolla, commonly called English court-plaster. It is prepared according to the following formula: Mastic in globules, 3 grammes; balsam of Peru, 1 gramme; narcotin, 1 gramme. Each substance is separately ground; 5 grammes of chloroform are added. The mixture is shaken from time to time, and allowed to rest after solution.

MICRO-ORGANISMS IN THE BLOOD, IN CLOSED CAVITIES, AND IN VARIOUS SECRETIONS.—Recent researches have led Eiselsberg to the following conclusions, which agree with those of Ogston, Rosenbach, and Passet: 1. In the blood of healthy persons there are no micro-organisms, those forms described by Hoffman as micro-organisms being products of the destruction of blood-corpuscles. 2. In the blood of those suffering from septicæmia or pyæmia are found mostly pus-cocci, chiefly the Staphylococcus pyogenes albus, sometimes the Staphylococcus pyogenes aureus and streptococcus, or the three kinds mingled. 3. In the blood of erysipelas patients the specific pus-coccus does not appear. This agrees with the experience of Fehleisen. 4. In the blood of patients with fever, who are suffering from wounds, but with no connection between the two, there are found no pus-cocci. 5. In closed pus-cavities (phlegmons, carbuncles, osteo-myelitic and myelitic abscesses, empyema, tonsillar abscesses, etc.) there always appear the various kinds of pus-cocci, singly or mixed. 6. In blisters he found no cocci, nor in ovarian cysts, nor echinococcus cysts, nor cysto-fibroma. When Eiselsberg failed to find cocci in the blood of septicæmia or pyæmia, he ascribed it to the circumstance that not every drop of the blood contained them.—*Centralblatt für Chirurgie.*

THE TREATMENT OF WHOOPING COUGH.—DR. P. Suerder has treated thirty children suffering from whooping-cough with nasal insufflations of finely powdered boric acid and roasted coffee. Dr. Arntzenius, of Amsterdam, says that in that city whooping-cough is endemic, there having been about twenty-five hundred cases in 1885, with a mortality of 7.6 per cent. He claims that the treatment of these cases with rarefied air has been attended with much success.

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Original Articles.

ON BACTERIA IN ICE, AND THEIR RELATIONS TO DISEASE, WITH SPECIAL REFERENCE TO THE ICE-SUPPLY OF NEW YORK CITY.

AN EXPERIMENTAL STUDY FROM THE LABORATORY OF THE ALUMNI ASSOCIATION OF THE COLLEGE OF PHYSICIANS AND SURGEONS, NEW YORK.

BY T. MITCHELL PRUDDEN, M.D.,
DIRECTOR OF THE LABORATORY.

(Concluded from page 350.)

Snow-ice and transparent ice.—If we look at the blocks of ice as it is being distributed from the wagons, we find a considerable variety in their appearance. In some cases the blocks will be clear and transparent throughout. This is most apt to be the case with river ice, while lake and pond ice is more apt to be somewhat whitish in appearance from the distribution through it of larger and smaller air-bubbles. This is, however, by no means always the case.

Again, the ice-blocks may be, for the most part, either transparent or slightly bubbly, while on one side—that side which was uppermost as the ice was forming—there will be a layer, of from one-half to three inches thick, which is white and opaque and more or less friable. Its opacity is not at all due to any impurities which it contains, but to the fact that it is thickly crowded with air-bubbles, around which the ice is irregularly crystallized. This is called "snow-ice," partly, doubtless, on account of its appearance, and partly because of its mode of origin.

Mode of formation of snow-ice.—After the first film of ice is formed at the surface of the water, the process of freezing goes on downward, as the heat from the water below radiates off into the colder air above. If anything occurs to prevent this radiation of heat upward, the formation of ice ceases. This happens, of course, if the temperature of the air rises above the freezing-point, but it also occurs if any considerable amount of snow collects upon the surface of the ice already formed. The air, which is caught in innumerable tiny cavities between the snowflakes as they settle upon the ice, acts as a blanket to prevent radiation, and thus the formation of fresh ice below comes to a stand-still, even though the weather be quite cold. Snow is for this reason a great bugbear to the ice-harvesters. It must be gotten rid of at any cost, for, if not, the crop stops growing. Now two courses are open to the ice-farmer: If the already formed ice is thick enough to bear he can go on with his horses and scrape the snow off from his ice-field, and this, as the writer is informed, is usually the preferable course when it is practicable and there is promise of plenty of cold weather, because if he gets rid of the snow he may get ice which is clear and transparent throughout, and which, at least for household and drinking purposes, is most popular and valuable.

But if, when the snow comes, the already formed ice is not thick enough to bear, or if the weather prospects indicate a lack of cold, so that he fears lest the ice may not be thick enough for profitable handling, he cuts a series of small holes in various places over his ice-field, the water from below pours up over the surface, merges with the snow and freezes. In this way, while the non-conductibility of the snow-blanket is largely reduced, he gets an additional layer of ice on top. This operation is called "flooding" or "bleeding" the ice. But this partially melted snow-layer is never transparent, because a large number of air-bubbles will still remain entangled in it. This is one way in which snow-ice is formed, on the top of the blocks as we see them in the market, and it is white on account of the large number of entangled air-bubbles.

Very frequently the snow is followed by rain, and then a snow-ice layer may form on top by natural means, from the water which falls directly upon the ice or runs onto it from the banks.

If the ice is thick enough, so that the harvester can afford to do it, this top snow-layer may be planed off, though at considerable expense, leaving transparent ice. But it is the practice of most harvesters to leave a layer of from one to three inches in thickness of the snow-ice on the top of the block, because it forms, on account of its enclosed air-bubbles, a protective layer on one side which retards melting and waste of the clear ice both in the storage houses and in transportation.

It is a frequent practice of some of the more responsible dealers to chip off most of this snow-ice layer before it is weighed out to customers. The temptation to not remove this snow-layer, but to weigh and deliver it with the rest is, however, so great, particularly in years when the supply is short, that it is very often not successfully resisted, as anyone may convince himself who will take the trouble to notice the blocks of ice which are left at houses through the city. Ice having a large amount of snow-ice in the block is known in the slang of the handlers as "fat" ice.

Sometimes when forming both the ice and snow sink a little, and a considerable depth of water covers both and freezes; then the snow-ice will be embedded in the block in the form of a dense, bubbly streak between layers of transparent ice.

Bubbly streaks in ice.—Still again, one frequently sees strata of air-bubbles enclosed in the block of ice, which lie parallel to the surface but below the snow-layer in the transparent ice which was formed downward. These are apparently due to the accumulations beneath the ice of air-bubbles which have freed themselves from the water as it freezes, or, in ponds, in part at least, from decomposing matter at the bottom, and finally became enclosed as congelation proceeded downward. These streaks or bands of enclosed bubbles which lie between bands of clear ice may be narrow or broad, and a series of them may often be seen lying close together with clear ice-bands between them, like the strata of sedimentary rock.

These alternating bands of bubbly and transparent ice give us a very interesting record of the varying temperature during the time in which the ice was forming. For it appears that if the temperature is low for a considerable period, so that the formation of ice downward in the water steadily proceeds, this ice, particularly in rivers or where the water is in motion, will be apt to be quite transparent, containing but a few scattered bubbles. If, however, the temperature rises, so that the ice does not form at all or makes but slowly, bubbles are apt to collect on the under surface and become enclosed in streaks when ice begins again to form. Thus we may have a series of narrow, closely packed, alternating, transparent, and bubbly layers, as a record of the nightly freezing and

the daily thaw, or a series of broader bands when the changes of temperature follow one another less closely.

Disintegration of ice.—Finally, ice which has been exposed to a moderately warm temperature out of doors is apt to undergo a gradual molecular disintegration, and long air-bubbles may appear in it along the sides of the ice-crystals of which, though invisible, the solid ice is composed. As these ice-crystals, after the first surface film is formed at the commencement of the freezing, lie with their long axes perpendicular to the free surfaces of the ice, the long bubbles caused by disintegration lie in the same direction.

This process of disintegration is called "combing," and large masses of ice may in this way become very rotten and friable, while retaining their external form, either with or without the collection of long air-bubbles between the partially melted ice-crystals. With air which enters the ice in this way by its disintegration, and with vacuoles which look like air-bubbles, but are caused by the localized melting of small portions of ice within the solid block, the present study has nothing to do. For a long series of analyses of ice in this condition, made by the writer, shows, as was to be expected, that the presence of these disintegration air-bubbles and of vacuoles has no relation whatsoever to the number of bacteria present in the ice.

Lake and river ice.—Exactly why pond and lake ice should be apt to contain more scattered air-bubbles than river ice, and hence to appear more or less whitish, is not altogether clear, nor is it by any means always the case. But the tendency seems in a measure due to the absence of running currents of water, which in rivers would tend to carry off the air-bubbles, while in still ponds and lakes these would be more apt to be caught and frozen where they lodged beneath the ice.*

Sometimes large volumes or "blebs" of air or gas are seen beneath the ice of ponds. The contents of these blebs are, in some cases at least, inflammable, as has been seen by making a small hole in the ice above them and applying a match as the gas is forced up. This gas, of course, and doubtless a considerable proportion of the smaller bubbles, in some cases, is the result of vegetable decomposition at the bottom of the water, a process which, as is well known, is sometimes in summer very active.

Popular prejudice against bubbly ice.—The popular prejudice against white—that is, bubbly—ice, which is very strong and, so far as we have hitherto known, as unreasonable as it is potent, is apt to work against some of the very best sources of ice-supply, namely, ponds and small lakes. "Clear ice," say the observant consumers, "we can look right through and see for ourselves that there is nothing bad in it. We can't see through white ice, and there must, therefore, be something in it, and we don't want ice which is so full of something or other that we can't see through it." It is in vain that the laws of optics are called to the help of the ice-dealer; in vain that the "something" is again and again demonstrated to be nothing more harmful than air; in vain that purity and whiteness in snow are shown to be compatible qualities. One consumer trusts his own senses rather than the refinements of science; another, perhaps at last convinced, still urges that the market value of winter wind or decomposition-gas is not rated at ten dollars per ton.

It was primarily in view of this condition of affairs that throughout the following series of ice-analyses the writer carefully separated the samples of ice subjected to examination into two classes: First, clear ice, or ice which contained but a few scattered bubbles; and, second, snow-ice and very bubbly streaks formed beneath the surface.

This distinction between the snow and bubbly and the transparent ice, which was made by the writer at first with a view of combating the popular prejudice against white ice, proves, after all, to be an exceedingly important factor in forming our opinion of the quality of a given ice-sample.

The first thing which strikes the observer, as he examines in detail the results of the analyses of the ice of both these classes, is the great variability in the number of living bacteria which ice, even from different parts of the same block, contains. This it is which makes a large number of analyses imperative, if we would arrive at general conclusions regarding the number of bacteria which ice from any given source contains. This unequal distribution of the bacteria in ice is not surprising, since the same inequality has been repeatedly shown to exist in water, owing doubtless to minute currents and eddies and incomplete mixing or distribution of the contaminating material.

Results of Analyses of Hudson River Ice.—Let us look first at the Hudson River ice, and for convenience we will make separate tables for the ice which is harvested immediately below Albany and that which is gathered in the region from six to fifty miles below.

Table XIII.—*Number of Living Bacteria in One Cubic Centimetre of Melted Ice from Various Points on the Hudson River, from Castleton, about Six Miles below Albany, to Rhinebeck, about Fifty Miles below.*

Transparent ice, 83 samples.		Snow-ice and very bubbly streaks, 34 samples.	
Number of living bacteria in 1 c.c. of the melted ice.	Number of samples.	Number of living bacteria in 1 c.c. of the melted ice.	Number of samples.
Less than 10	In 23 samples.	Less than 100	In 0 sample.
Bet. 10 and 50	" 22 "	Bet. 100 and 200	" 1 sample.
" 50 " 100	" 12 "	" 200 " 300	" 2 samples.
" 100 " 200	" 16 "	" 300 " 500	" 1 sample.
" 200 " 500	" 4 "	" 500 " 1,000	" 5 samples.
" 500 " 1,000	" 3 "	" 1,000 " 2,000	" 4 "
" 1,000 " 5,000	" 2 "	" 2,000 " 5,000	" 12 "
" 5,000 " 6,000	" 1 sample.	" 5,000 " 10,000	" 7 "
		" 11,000 " 12,000	" 2 "

In two cases only were samples found which contained in one cubic centimetre no bacteria at all.

Table XIV.—*Number of Living Bacteria in One Cubic Centimetre of Melted Ice from the Hudson River just below Albany.*

Transparent ice, 24 samples.		Snow-ice and very bubbly streaks, 12 samples.	
Number of living bacteria in 1 c.c. of the melted ice.	Number of samples.	Number of living bacteria in 1 c.c. of the melted ice.	Number of samples.
Less than 50	In 3 samples.	Less than 100	In 0 sample.
Bet. 50 and 100	" 3 "	Bet. 100 and 200	" 0 "
" 100 " 200	" 5 "	" 200 " 300	" 0 "
" 200 " 500	" 3 "	" 300 " 500	" 0 "
" 500 " 1,000	" 3 "	" 500 " 1,000	" 0 "
" 1,000 " 5,000	" 6 "	" 1,000 " 5,000	" 0 "
" 5,000 " 6,000	" 1 sample.	" 5,000 " 10,000	" 1 sample.
		" 10,000 " 20,000	" 4 samples.
		" 20,000 " 30,000	" 4 "
		" 30,000 " 40,000	" 1 sample.
		" 40,000 " 50,000	" 1 "
		55,000	" 1 "

It should be remembered that all of the analyses recorded here were made from specimens taken from different cakes of ice, and so far as possible from those cut in different places in the field. So that a fair sampling was insured.

The following table summarizes these results, giving the averages of the detailed analyses:

Table XV.—*Hudson River Ice.*

Source.	Number of samples.	Forms of ice.	Number of bacteria in 1 c.c.
All sources	153	Trans. & snow.	3,040
All sources	107	Transparent	398
	46	Snow	9,187
From 6 to 50 miles below Albany	83	Transparent	189
	34	Snow	3,693

* Many interesting facts about ice formation and characters may be found in the files of the very readable Ice Trade Journal, published in Philadelphia.

While the great difference in the bacterial content of ice taken from the region of Albany and that gathered farther down the stream is thus very evident, a still more graphic representation is afforded if we take the average numbers of living bacteria found in one cubic centimetre of both transparent and snow ice gathered at various points along the Hudson River and express them in a chart.

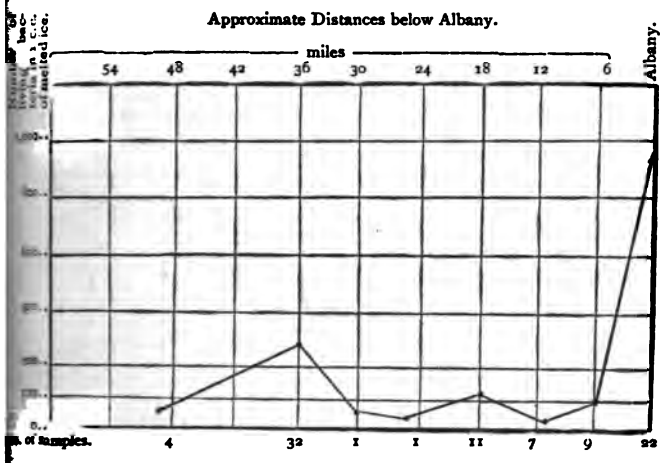

FIG. 1.—Transparent Ice.

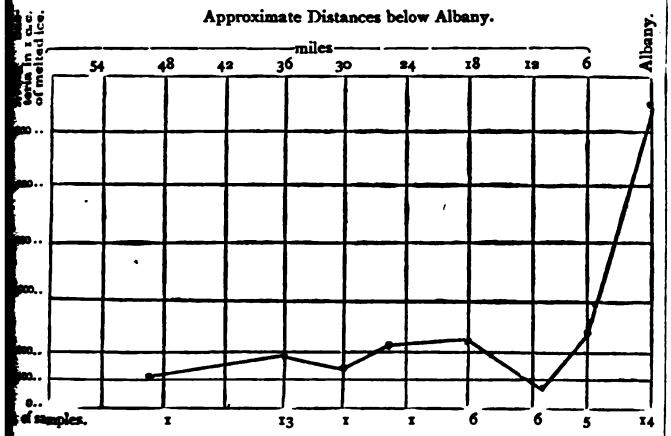

FIG. 2.—Snow Ice and very Bubbly Streaks.

These charts show with great distinctness that ice formed near Albany contains vastly greater numbers of bacteria than that formed at some distance below. It is evident, therefore, that by natural agencies the water of the river is freed to a certain degree from bacteria after running for some distance. Still, the average number of bacteria left in the ice is considerably above that which can be regarded as wholly safe.

It should be said, in justice to the Hudson River ice, that the crop of the winter 1885–86, from which most of the analyses above recorded were made, was of poorer quality than usual, because the season was an unfavorable one; but the careful selection by the writer of well-formed samples for analyses would partly, at least, offset the general unfavorable conditions.

So far as this series of analyses shows, the ice does not, as one might at first expect, get freer and freer from bacteria as the distance from Albany increases, but from six to fifty miles below Albany, with local fluctuations difficult to explain, remains very nearly the same. It, of course, presents some variation when cut below the smaller towns which drain into the river.

But a very much more extended series of examinations will be necessary before we can determine with any great degree of accuracy how far the river has to run below a source of sewage contamination in order that the water may, by freezing and other natural agencies, free itself to a proper degree from its bacterial contaminations, or if, indeed, it does so at all.

The remarkable difference in the bacterial contents of snow ice together with very bubbly streaks, and transparent ice, prevails in all parts of the river alike, and it is surprising, not only how constant the difference is, but also how abrupt the transition is in the ice-block between the few and the many bacteria, corresponding exactly to the line of demarcation of the clear and bubble ice. Thus in a series of examinations, made from snow ice or very bubbly streaks and very clear ice in the same ice-cake in various samples from the Hudson, we get results expressed in the following table:

TABLE XVI.—*Relative Number of Living Bacteria in 1 c.c. Transparent Ice and Snow Ice taken from the Hudson River, as shown by the Analysis of Adjacent Portions of the same Ice-blocks—Specimens from Various Parts of the River.*

Source.	Greenbush, near Albany.	Castleton.	Barren Island.	Coxsackie.	Germantown.
1 Transparent..	46	66	32	44	150
Snow	10,020	5,184	520	12,642	9,234
2 Transparent..	3,192	92	122	92	919
Snow	15,624	2,430	268	430	11,584
3 Transparent..	2,322	585	.....	676	9
Snow	55,062	9,600	.....	4,294	114
4 Transparent..	218	.....	.....	.....	2
Snow	9,690	.....	.....	.....	1,308
5 Transparent..	918	.....	.....	.....	.....
Bubbly streak	26,049	.....	.....	.....	.....

These are only a part of the analyses made in this way, and are taken quite at random from the list. In no case was there an exception to the rule that snow and very bubbly ice contains a much greater number of bacteria than adjacent transparent ice from the same block.

The very bubbly streaks, although containing, as a rule, very many more bacteria than the transparent ice, still do not generally contain nearly as many as the top layers of snow ice.

RESULTS OF ANALYSES OF LAKE AND POND ICE.—Before attempting to explain this curious difference between snow ice and transparent ice, let us look at the results of the analyses of the lake and pond ice from the above-described sources.

TABLE XVII.—*The Number of Bacteria in Rockland Lake Ice.*

Transparent ice, 17 samples.		Snow ice, 5 samples.	
Number of living bacteria in 1 c.c. of the melted ice.	Number of samples.	Number of living bacteria in 1 c.c. of the melted ice.	Number of samples.
Less than 10.....	In 1 sample.	Less than 100.....	In 0 samples.
Bet. 10 and 50..	" 4 samples.	Bet. 100 and 200	" 0 "
" 50 " 100..	" 3 "	" 200 " 300	" 0 "
" 100 " 200..	" 5 "	" 300 " 500	" 0 "
" 200 " 500..	" 2 "	" 500 " 1,000	" 0 "
" 500 " 1,000..	" 2 "	" 1,000 " 2,000	" 3 "
		" 7,000 " 10,000	" 2 "

TABLE XVIII.—*The Number of Bacteria in Ice Pond Ice.*

Transparent ice, 36 samples.		Snow ice, 15 samples.	
Number of living bacteria in 1 c.c. of the melted ice.	Number of samples.	Number of living bacteria in 1 c.c. of the melted ice.	Number of samples.
Less than 10.....	In 9 samples.	Less than 100.....	In 1 sample.
Bet. 10 and 50.	" 1 "	Bet. 100 and 200.	" 1 "
" 50 " 100.	" 6 "	" 200 " 300.	" 0 "
" 100 " 200.	" 4 "	" 300 " 500.	" 1 "
" 200 " 500.	" 6 "	" 500 " 1,000.	" 3 samples.
" 500 " 1,000.	" 3 "	" 1,000 " 2,000.	" 2 "
" 1,000 " 2,000.	" 4 "	" 2,000 " 5,000.	" 4 "
" 3,000 " 4,500.	" 3 "	" 5,000 " 6,300.	" 3 "

TABLE XIX.—*The Number of Bacteria in Swartout Pond Ice.*

Transparent ice, 16 samples.		Snow ice, 7 samples.	
Number of living bacteria in 1 c.c. of the melted ice.	Number of samples.	Number of living bacteria in 1 c.c. of the melted ice.	Number of samples.
Less than 10.....	In 13 samples.	Less than 100	In 2 samples.
Bet. 10 and 50...	" 1 sample.	Bet. 100 and 200.	" 0 "
" 50 " 100...	" 1 "	" 200 " 300.	" 1 "
" 100 " 200...	" 0 "	" 300 " 500.	" 2 "
" 200 " 300...	" 1 "	" 500 " 1,000.	" 1 "
		" 1,000 " 2,000.	" 1 "

A smaller number of analyses was made from Tuckahoe, Van Cortland, and Verplank's Point ice, but the tables are given for the sake of comparison.

TABLE XX.—*Number of Bacteria in Tuckahoe, Van Cortland, and Verplank's Point Ice.*

TUCKAHOE.

Transparent ice, 4 samples.		Snow ice, 4 samples.	
Number of living bacteria in 1 c.c. of the melted ice.	Number of samples.	Number of living bacteria in 1 c.c. of the melted ice.	Number of samples.
Less than 10.....	In 3 samples.	Less than 100.....	In 4 samples.
Bet. 10 and 50.....	" 1 sample.		

VAN CORTLAND.

Transparent ice, 5 samples.		Snow ice, 4 samples.	
Less than 10.....	In 3 samples.	Less than 100.....	In 3 samples.
Bet. 10 and 50.....	" 2 "	Bet. 100 and 200....	" 1 sample.

VERPLANK'S POINT.

Transparent ice, 3 samples.		Snow ice, 3 samples.	
Less than 10.....	In 3 samples.	Less than 10.....	In 3 samples.

It will be seen from the last table that while the specimens from Van Cortland and Tuckahoe were taken from different blocks and thus more fairly represent the ice, the samples in the case of Verplank's Point were all from a single block, taken from the pond as a sample before the ice-cutting season of 1886–87 began. But as it was only a single specimen, the value of the result is but moderate.

The same sharp contrast in the number of bacteria in transparent ice and snow ice, or very bubbly streaks, is found in lake and pond ice which we have seen in river ice, as may be seen by the following table:

TABLE XXI.—*Relative Number of Living Bacteria in 1 c.c. Transparent and Snow Ice from the Same Cakes —Specimens from Lakes and Ponds.*

Source.	Rockland Lake.	Swartout Pond.	Ice Pond.	Tuckahoe and Van Cortland.
Transparent	67	1	10	2
Snow	1,578	95	236	64
Transparent	190	214	1,512	24
Snow	1,260	367	5,520	54
Transparent	115	....	56	....
Bubbly streak.....	9,120	....	306	....
Transparent	14	....	....	....
Bubbly streak.....	1,368	....	....	....
Transparent	....	....	22	40
Snow	....	....	3,960	170

It will be seen from this table and the similar one constructed from analyses of the river ice, that the number of bacteria in the transparent ice affords no criterion of the number in the adjacent snow ice, and *vice versa*. So that in a cake of ice whose snow-layer contains an unusually small number of bacteria—as snow ice goes—the transparent ice may, on the other hand, contain an unusually large number; and the converse is equally true. Taking all the analyses of the lake and pond ice together, there is a much larger number of samples containing no bacteria at all than in the Hudson River ice. This absolute freedom is in both cases always in transparent ice. Thus, in 16 specimens from Swartout Pond there were 4 in which one cubic centimetre of the ice was entirely free from bacteria. In 118 samples of lake and pond ice there were 8 containing no bacteria, while in 153 samples of Hudson River ice there were only 2 entirely free, and these were gathered from the lower part of the river.*

TABLE XXII.—*Lake and Pond Ice—Summary.*

Source.	Form of ice.	Number of samples.	Number of bacteria in 1 c.c.
Rockland Lake	Transparent....	17	181
	Snow	5	4,116
Swartout Pond	Transparent....	16	20
	Snow	7	565
Ice Pond	Transparent....	36	618
	Snow	15	2,469
Tuckahoe Pond.....	Transparent....	14	6
	Snow	4	63
Van Cortland Lake....	Transparent....	5	16
	Snow	4	81
Verplank's Point.....	Transparent....	3	5
	Snow	3	1

The exception to the rule that snow ice contains more bacteria than the adjacent transparent ice, which is seen in the result from a single cake from Verplank's Point, will be considered below.

If, for the sake of comparing the lake and pond with the Hudson River ice, we place the averages together, we have the following table:

TABLE XXIII.—*Relative Number of Bacteria in One Cubic Centimetre of Hudson River Ice and Lake and Pond Ice.*

Form of ice.	Hudson River, 153 samples.	Lakes and Ponds, 119 samples.
Transparent.....	389	318
Snow.....	9,187	1,636

If, however, in order to give the Hudson River ice its due credit we exclude the ice cut near Albany, we have the following table:

TABLE XXIV.—*Relative Number of Bacteria in One Cubic Centimetre of Hudson River Ice, from Six to Fifty Miles Below Albany, and Lake and Pond Ice.*

Form of ice.	Hudson River, 117 samples.	Lakes and Ponds, 119 samples.
Transparent.....	189	318
Snow.....	3,693	1,636

The summary of the last two tables is at first sight rather surprising, for we see that the average number of bacteria in a cubic centimetre of transparent ice from the lakes and ponds, free as they are from obvious sewage pollution, is still almost as great as the average in transparent ice from all parts of the river; while if we exclude ice from Albany the average number in ice from the remainder of the river is even considerably less than that of the pond and lake ice.

If we look, however, at the transparent ice from the various lakes and ponds, we see that the general average is raised by the ice from Ice Pond, in which 618 represents the average, as against 78 which represents the average of all the other ponds and lakes taken together.

* *Maine Ice.*—A few samples of Maine ice from Gardner's Bay were examined. The average number (in one cubic centimetre) in transparent ice was 85; in snow ice, 250. One block showed in the top snow-layer in one cubic centimetre, 378; the middle of the thick transparent portion below gave 198; while the lower part of the transparent ice—*i.e.*, that which was formed last—contained only 37. The number of specimens examined was, however, so small—five—that inferences as to the bacterial qualities of the Maine ice should not be drawn from the results.

Now the Ice Pond ice, in the samples examined, was especially rich in the fluorescent bacillus, which, as experiments show, proliferates readily in water—even in boiled distilled water in the laboratory experiments. This fact, together with the partially stagnant character of the pond, with its large communicating swamp, would seem to fully explain the high average which is found here, especially when we remember how resistant is this species to the cold.

TABLE XXV.—*Showing Average Number of Bacteria in One Cubic Centimetre of Melted Ice from Various Sources as Compared with the Average Number in Croton Water during the Winter of* 1886–87, *when both were Examined.*

	Average number of bacteria in 1 c.c. of the melted ice	Average number of bacteria in 1 c.c. of Croton water, winter 1886–87, 32 samples.
Transparent and snow ice and ice with very bubbly streaks, from all sources; 272 samples	2,033	243
Transparent and snow ice and ice with very bubbly streaks, from all sources except just below Albany; 236 samples	971	243
Transparent or slightly bubbly ice from all sources; 188 samples	363	243
Transparent or slightly bubbly ice from all sources except just below Albany; 164 samples	252	243

We see from this table, which summarizes the results of a large number of analyses from many sources, that if the bacteria in ice are of any significance at all, the snow-layer is to be avoided for drinking purposes, and also that the sewage of a large town makes a good deal of difference in the bacterial content of the ice gathered near it.

We are further led to the rather striking conclusion that if we use only transparent ice and avoid that which is harvested near Albany, sewage-polluted as the Hudson River is, we do not on the average get more bacteria than in our ordinary unfiltered winter Croton water. The significant difference in the *species* of bacteria in the two cases will be considered farther on.

Although the very bubbly streaks contain, as a rule, many more bacteria than the transparent ice adjacent to them, the proportion in real snow ice is almost always so much greater, that it alone appears to be of great importance in this respect. Indeed, the rule that very bubbly and snow ice contains more bacteria than transparent ice holds good only when the water from which the ice is formed contains a considerable number of bacteria. Thus, the only exception to the rule which has been encountered by the writer in this long series of examinations was in ice from Verplank's Point, in which, as will be seen from Table XX., the snow-layer contained a less average number of bacteria to one cubic centimetre than the transparent ice, and the number in both was very low. But the water from this pond, which was collected at the time the ice was secured, contained in an average of four analyses only 175 living bacteria.

BACTERIA IN SLIGHTLY BUBBLY ICE.—A long series of analyses made for this purpose have shown that this relationship between the number of air-bubbles and the bacteria in ice exists to an appreciable extent only when the air-bubbles are very numerous, as in real snow ice and in very bubbly streaks; while moderately bubbly lake ice, which has small bubbles scattered through it, so as to look whitish and opaque only in large blocks, does not show an appreciably larger number of bacteria than quite transparent ice from the same source. This will not seem strange if we examine carefully typical moderately bubbly lake ice, which looks quite opaque in large cakes; for we then find that in small pieces it is almost as transparent as the clearest ice, and that the number of scattered bubbles required to give a large block of ice an opaque whitish appearance is really very moderate indeed.

We thus see that the unreasonable popular prejudice against bubbly ice appears to have, after all, a real basis, so far as the snow-ice layers so frequent on the top of the ice-cakes are concerned; the ordinary opaque ice, however, with comparatively few bubbles, is apparently just as free from bacteria as the most transparent.

Such moderately bubbly lake ice, or ice from any source containing scattered bubbles, may on exposure become very much whiter; and very scantily bubbly streaks or bands in transparent ice may become, under the same conditions, so white and broad that, when viewed at a little distance in the block, they look like layers of sunken snow ice. But a close inspection in either case shows that this change is due to an internal disintegration of the ice around the air-bubbles by heat transmitted through the surrounding intact ice. In this way, as a little of the ice along the sides of the invisible crystals melts, and in so doing occupies less space than before, the air in the original bubbles expands to fill the vacuum, and the rarefied bubble becomes elongated to fill the long space between the crystals.

In this way a given plane of the ice-block, which formerly contained so few scattered rounded bubbles that they were almost invisible, or at least quite inconspicuous, may in a short time become the seat of a broad, palisade-like stripe. The insignificance of these long disintegration bubbles has been emphasized above. If a fragment of ice containing these rarefied bubbles, which are embedded in solid ice and not in communication with the external air, be put under water in a shallow glass dish and carefully watched as it melts, these disintegration bubbles may be seen to suddenly contract as they are freed by the melting of the ice around them and rise to the surface.

REASONS FOR EXCESS OF BACTERIA IN SNOW ICE AND IN VERY BUBBLY STREAKS.—Let us now see if this marked excess of living bacteria in snow ice and in very bubbly streaks over the solid transparent ice can be explained.

It was noticed by the writer, in the large number of analyses made of snow ice and also of the very bubbly streaks in clear ice, that two or three species of bacteria were almost always particularly abundant. The most common of these was the fluorescent bacillus above described. The other most common form is a short bacillus forming spreading iridescent colonies, not fluidifying.

Both of these bacilli are capable of performing vigorous movements in water, as may be readily seen under the microscope. Both of them grow much more abundantly on the surface of the gelatin where there is plenty of air, and if the air be cut off, as by laying a mica-plate on the surface of the gelatin where they are planted, their growth is very meagre. They are what are called aërobic forms of bacteria.

In view of this character, it seemed not improbable that these species, and perhaps others as well, would tend to make their way in the water toward the air-bubbles which might be collected at any point, and be caught here by the freezing of the water. If this were true, it would explain, in part at least, the curious fact of the excess of bacteria in bubbly layers of ice over the clear portions near by.

In order to test this hypothesis the following experiments were devised and executed. Three deep, flat dishes were carefully sterilized and filled about two-thirds full of sterilized water, in which had been thoroughly diffused some of the above-described fluorescent bacilli. It was found by an analysis of this mixture that one cubic centimetre of the water contained 21,384 living bacteria. Now I had gathered for this purpose, in a large clean flask on the morning on which these experiments were got under way, a quantity of clear, freshly fallen snow. This snow was obtained in the upper part of Central

Park, at a point as far away as possible from paths and roads, which were in a very clean condition, however, as they were just being cleared after the snow-fall. Analysis of the water obtained in melting this snow showed that it contained on the average only four bacteria to the cubic centimetre, a number so small as to be of no importance in this connection.

Now three small wads of this snow were made by tamping it firm with a clean knife-blade, and these were completely soaked with sterilized water. They were then dropped into the dishes containing the bacteria in the water, one wad into each. The dishes were then carefully covered, allowed to stand for about ten minutes in a cold place so that the snow would not melt completely in the water, and were then put into the refrigerator, where, within an hour, they were frozen solid.

It was found on examination of the dishes that in the centre of each lay the lump of snow, a little smaller, but otherwise not apparently changed, and enclosing many air-bubbles. From this snow-lump a large number of elongated air-bubbles radiated in all directions, while around the edges of the dishes was a zone of perfectly transparent ice. We thus have an almost exact experimental reproduction of the conditions found in adjacent strata of snow or bubbly and transparent ice. The ice in these dishes was examined, one at the end of four days, one on the seventh, and the third on the fourteenth day.

At the examination the dishes were set in a vessel of warm water which came up around the sides, and when the transparent zone at the sides and bottom was melted off, the resulting water was drained off after measured quantities for duplicate analyses had been secured by means of sterilized pipettes. The bubbly central portion was then allowed to melt, and duplicate samples of this were examined.

The following figures show the results:

Dish No. 1.	Dish No. 2.	Dish No. 3.
Outer clear zone contains in 1 c.c. 5,366 living bacteria.	Outer clear zone contains in 1 c.c. 1,808 living bacteria.	Outer clear zone contains in 1 c.c. 368 living bacteria.
Central bubbly zone contains in 1 c.c. 6,048 living bacteria.	Central bubbly zone contains in 1 c.c. 3,154 living bacteria.	Central bubbly zone contains in 1 c.c. 798 living bacteria.

It will thus be seen that the bubbly central portion, which when dropped as sodden snow into the bacterial fluid contained practically no bacteria at all, harbored, when examined together with the stratum next outside of it, into which a part of its air had been forced along the line of crystallization, a considerably larger number of living bacteria than the peripheral zone which contained almost no air-bubbles. This condition of affairs would seem to indicate that the bacteria had worked their way toward the air-bubbles during the short interval which elapsed between the introduction of the bubbles in the snow and the solidification of the mass by freezing.

Still these results could be explained by supposing that in some way the bacteria which lay among the radiating air bubbles, which had been forced out into the fluid by the freezing, were not killed in as great numbers as in the external transparent zone. We must see whether in fact these bacteria can travel through water toward air-bubbles. To test this several glass slides, with small concavities or pits in their upper surfaces, were sterilized, and the pit or cell nearly completely filled with sterilized water, in which had been uniformly diffused a small number of the fluorescent bacilli. The number was so small that the water in the cell remained perfectly transparent. Now a thin cover-glass was dropped over the cell in such a way as to leave one small bubble of air, the rest of the cell being completely filled with the bacteria-containing water. A rim of oil was now painted around the edge of the cover-glass, so that contact with the external air was completely shut off. Of course in these manipulations great care was taken that no external contamination should occur.

These slides were now set aside in a moderately warm place and examined after a few hours. In every case a distinct cloudy ring, like a halo, was readily seen close around the air-bubble, sometimes most marked at one side, while the remainder of the water in the cell was perfectly clear. An examination with the microscope showed this ring to be composed of large numbers of bacteria of the species originally introduced into the water. These apparently had made their way toward the bubble, close around which they were clustered.

But yet another possibility must be considered, namely, that the cloudy mass of bacteria around the air-bubble may not have come there from the surrounding water, but have found in this place conditions suitable for their proliferation and growth, and so been formed in large numbers on the spot.

Another set of slides was therefore prepared in exactly the same way, but, instead of being left in a warm place, they were put into a jar and sunk in a tub which contained a large quantity of melting ice and water, that is, at a temperature not much above freezing. Examination of these specimens after twenty-four and forty-eight hours showed in a most marked manner, the halo of bacteria around the bubble in every case.

Now at this temperature, so far as we know, bacteria do not proliferate, so that it would seem to be true that in some cases at least bubbly ice contains more bacteria than adjacent transparent ice, because certain bacteria, owing to their need of air, tend to collect around air-bubbles which are present in water, and are caught there when freezing occurs.

It is not probable that this is the only reason, or applies in all cases. It is probable that in most cases the top snow-ice layer contains more bacteria because these are washed down upon the surface from the shores of the bodies of water on which the ice is forming, or come from the air.

Pengra has shown, as reported by Gardiner,[9] that in some cases at least the snow ice contains a considerably larger percentage of solid material than the clear ice below.

It is conceivable, also, that the physical conditions of the ice in which air-bubbles are very abundant and the crystallization irregular are such that less numbers of bacteria are killed in the freezing than in the more compact transparent ice.

Englemann,[10] in 1881, observed the tendency of certain bacteria to make their way in fluids to the edges of air-bubbles and to the vicinity of fluids containing oxygen, or plants which were developing it by their life-processes, and suggested this action of such bacteria as a delicate means of detecting the presence of the minutest quantities of oxygen in fluids.

The Different Species of Bacteria present in the Lake, Pond, and River Ice supplied to New York City.—A large number of different species of bacteria have been separated from the ice examined, in the form of pure cultures, and the life history of some of them has been traced in detail. But it is not within the scope of this article to enter into this part of the subject, because the work is not yet completed. No experiments have yet been made with a view of determining whether any of the species isolated are pathogenic.

It should be stated, however, as bearing directly upon our theme, that while the number of different species commonly occurring in the pond and lake ice is moderate, two or three being usually largely in excess, the number of species in the Hudson River ice is very great, more especially so in the ice formed near Albany. This is what would be expected when we remember what enormous numbers of different forms are always to be found in sewage and in sewage-contaminated streams or other bodies of water. The fluorescent bacillus appears to be more abundant in some of the pond ice, such as that from Ice Pond, than in the river ice.

It is not a little curious that, in the same block of ice,

different strata often show a marked difference in the species of bacteria which preponderate. So that we sometimes have in ice, not only, as above mentioned, a record of the temperature and other conditions of the air at the time the ice was forming, but also a memorandum, not less precise than that afforded by the fossils in geologic strata, of the flora which was most predominant in the water when it solidified. We are more fortunate than is the geologist, however, thanks to the method of biological analysis, in that by supplying the proper conditions of environment and nutrition, we can call our bacterial fossils back to life and make out the vital characters which, in their dormant state, are not revealed.

SUMMARY.—Let us now review briefly the more prominent facts which this study has elicited. We have seen that by the biological analysis of water and of ice we are enabled to detect with great certainty the presence of bacteria, some species of which can give rise to serious disease, and that the chemical analysis alone does not suffice, in cases in which such organisms may be present, but that when we have determined the number of bacteria present in water or ice, a great deal of careful study of other conditions is still necessary in order to determine whether the water or ice is suitable for use or not.

We have seen that the popular impression that water purifies itself in freezing is only partly true. While some gross particles, and to a certain extent materials in solution may be largely removed, the bacteria, which are the most important, if not the sole agents in water deleterious to health, are only in part destroyed by the act of freezing. This partial purification from bacteria is not brought about by their expulsion from the water, but by the death of a varying proportion of them, which cannot survive this reduction of temperature. So that, if the bacterial contamination of the water is extreme, or is largely made up of the more hardy species, the ice formed from it, even though quite transparent, may still contain large numbers of the living germs.

Different species of bacteria possess differing degrees of vulnerability to the action of low temperatures. In some species nearly all the individuals are killed by prolonged freezing in water, while in other species a small proportion only is destroyed, and between these extremes are other species possessing intermediate degrees of resisting power.

Certain species of bacteria which are capable of producing serious and even fatal diseases in man—the bacillus of typhoid fever and the common bacterium of suppuration—are capable of resisting a prolonged exposure to a low temperature with the destruction of a part only of the individuals thus exposed.

The capacity of resisting a low temperature varies not only in the different species, but among the individuals of the same species, depending upon their condition of vitality when subjected to the deleterious influence. It varies also with the time of exposure to the cold and its intensity, and repeated freezings and thawings suffice to completely exterminate individuals and species which can successfully resist a steadily maintained low temperature. A persistent low temperature without freezing is more efficacious than when crystallization occurs.

While no absolute percentage of destruction can be given which will indicate the degree to which water containing bacteria usually purifies itself from them in the act of freezing, experimental data justify the belief that in ordinary natural waters there may be a purification of about ninety per cent.

The effect of freezing may in a general way be compared to that of filtration, but there is a very significant difference between them. By filtration the various species, dangerous and harmless, are eliminated with about equal efficiency, while in the purification by freezing the dangerous disease-producing species may be retained if they resist low temperatures, while more or less of the harmless forms may be destroyed. Freezing, therefore, acts as a selective filtration might, and may not free the water from all forms alike.

We have seen that the ice supplied to New York City comes from a series of naturally excellent lakes and ponds and from a great tidal river largely contaminated with sewage in its upper regions, and that by far the larger proportion of the ice comes from the latter source.

It has furthermore been shown that, while the conditions of the upper Hudson do not seem, during the ice-forming season, to be such as would favor purification from organic matter by oxidation, they do seem to be theoretically, and are shown to be practically, favorable to a considerable degree of spontaneous purification from bacteria by sedimentation, but that the limits and extent of this purification are yet to be made out.

Coming to the actual analyses of the ice from both the river and the lakes and ponds, we find a very much greater number of bacteria in the snow ice and in the very bubbly streaks than in the transparent ice, particularly in the snow ice on the top of the cakes. We find that while a part of this excess may be due to the washing down upon the surface of the ice from the shores of bacterial impurities, or their collection from the air, a not insignificant share is probably due, at least in the bubbly streaks, to the tendency which some forms of bacteria exhibit to collect in the vicinity of air-bubbles, and perhaps also to unknown physical conditions in the irregularly crystallized ice about these bubbles. Regarding the species of bacteria, we find that they are much more varied and abundant in the Hudson River ice than in that of the lakes and ponds, while in both there is a considerable proportion of the relatively harmless water bacteria.

We find that while the number of living bacteria varies greatly, not only in different parts of the same block of ice, but also in ice from different parts of the river and from the different lakes and ponds, the average number is considerably greater in ice from the Hudson River than in that from the lakes and ponds, even when ice taken from immediately below Albany is excluded from the estimate.

We have seen also that the average number of bacteria in ice from all sources taken together is far beyond the general standard which even a moderate degree of purity would allow.

But it is also evident that the transparent ice from some of the lake and pond sources presents in general a most admirable degree of freedom from bacteria.

INTERPRETATION OF RESULTS.—We now stand at last face to face with the most difficult and at the same time the most important part of our study, namely, the interpretation of its results and the suggestion of the practical lessons which it teaches.

We must be guided in this task by the general considerations which were set forth at the commencement of this paper, when we were reviewing the practical value of the biological methods of water analysis.

We saw, then, that the simple statement that a given sample of water contained a large number of bacteria was without great significance, unless with it we have an account of the condition of the source of the water at the time of the collection of the sample, because a large proportion of the bacteria ordinarily present in natural waters are, so far as we yet know, relatively or absolutely harmless. We must know whether a considerable proportion of the bacteria present are the at least relatively harmless water bacteria, whether the source may possibly be contaminated with sewage, etc.

Now, exactly the same questions must be asked regarding the sources of our ice.

Considering first the ponds and lakes, we find that the natural situation and surroundings of most of them are excellent and that evident sources of contamination with excretory material can be largely excluded. Whether, in the case of Rockland Lake, the dwellings on the hillside near it might furnish sources of absolute danger in

the event of an outbreak of typhoid fever, or not, the writer is not prepared to say, and would leave this and all other detailed criticism of the sources of ice-supply to those who, having the public health in charge, can speak authoritatively on the matter.

The large number of bacteria present in the average Ice Pond ice may readily be accounted for by the proliferation of water bacteria and by the connection which this sheet of water has with a swamp, and experiment shows that a considerable number of these are actually forms which proliferate in water and which, so far as we know, do not produce disease in man.

As regards the ice from lakes and ponds, then, we may conclude that although the product from some of them contains a larger number of bacteria than is consistent with the highest standards of good sanitation, the conditions could be readily changed so as to render them quite unimpeachable, and in no case is there absolute reason, so far as the writer is aware, to fear contamination with forms which are known to be disease-producing; while in some cases, notably in the smaller ponds, the ice, so far as the analyses show, is well within the standard of absolute excellence.

The Hudson River ice stands, on the other hand, on an entirely different basis. Thoroughly contaminated with sewage at the upper part of the ice-fields, the water receives fresh accessions of bacterial impurities at various points near some of the ice-fields, which lie at a considerable distance from Albany.

Now, given ice from this source, in which the average number of bacteria per cubic centimetre is absolutely large, and a great degree of sewage pollution, we have to ask ourselves what is the actual danger which we have to fear from the use of the ice for drinking purposes.

A considerable number of the bacteria are undoubtedly the relatively or absolutely harmless species which may exist in any natural river or spring water, but a large number may, with equal certainty, be assumed to originate from animal excreta. Here, again, it is scarcely to be doubted, although not yet demonstrated, that a considerable proportion of the bacteria which exist in sewage coming from human and other animal excreta and the varied putrefying fluids which form a prominent ingredient in the waste of populous towns, may not be positively dangerous if taken into the body in moderate quantities in drinking-water, and so far as such bacteria go, it would seem to be largely a matter of taste on the part of the consumer whether he uses such material for drinking purposes without purification or not. On the other hand, in every large town, such as Albany, and in smaller towns in lesser degree, there is more or less constantly passing into the sewers in the excreta or other wastage a considerable number of bacteria which are the cause of serious disease, and here it ceases to be a matter of individual preference, because the interests of the public health are involved.

There are some varieties of diarrhœal disturbance, sometimes mild, sometimes severe, particularly affecting persons who are sensitive in the matter of ingesta, which often seem to depend upon impurities in the drinking-water and in ice. Whether these are occasioned by sewage or other bacteria, or by organic matter in the water or ice, or by both, is not yet fully decided, so that we may leave this class of cases out of view for the present.

Fortunately cholera and anthrax, both bacterial diseases transmittible by drinking-water, are not ordinarily present in the sewage of the region which we are studying, so that these diseases also, which must not be ignored by those having the public health in charge, do not fall within the scope of the present study. But there are two very common and very important bacterial diseases which are almost constantly present in large towns like Troy and Albany, and frequently so in villages like many of those which lie along the upper Hudson. These are typhoid fever and the diseases associated with acute suppuration and the so-called blood-poisoning from wounds or pyæmia.

Now, it is unfortunately true, as the above researches show, that the bacteria causing these two forms of disease are markedly resistant to the temperature at which ice forms. The most important of these, and the one to which the writer has paid most attention in these studies, is the typhoid bacillus.

The health statistics of Albany do not show the number of cases of typhoid fever which occur in the city during the various months, but only the number of deaths from the disease. The deaths from this disease in the city of Albany, for the details of which I am indebted to Dr. Balch, Secretary of the State Board of Health of New York, during the months in which the ice on the Hudson is ordinarily forming, that is, from December to March, are as follows: From December, 1883, to March, 1884, 20; from December, 1884, to March, 1885, 14; from December, 1885, to March, 1886, 16. That is, an average of about 16 each season. Now the number of deaths represents a varying number of actual cases of the disease, since the mortality is exceedingly variable. But if, in order to be on the safe side in estimating the actual number of cases, we take the highest rate of mortality which ordinarily occurs as thirty per cent., we find that the chances are, as judging from the statistics of the past three years, that there will be not far from fifty cases of typhoid fever whose excreta will pass directly into the Hudson River from Albany each year during the ice-forming season.

The writer is informed that in Albany, as in most American towns, both in the hospital and among private patients, there is no systematic disinfection of the typhoid discharges, which therefore enter the sewers with their myriads of bacteria in a living condition. That they are present in myriads and living in the discharges of typhoid fever patients is a well-known fact, which the writer has had abundant opportunity to observe in making cultures of them for diagnostic and other purposes.

Now, the bacteria of typhoid fever are capable, as has been shown by Frankland, by Wolfhügel and Riedel, and by Bolton, and confirmed by the writer, of living for a considerable period in water, and they may, according to Frankland and Wolfhügel and Riedel, even proliferate in the water, particularly if, as in sewage, there is organic matter present. We have seen from the above studies that when the bacteria of typhoid fever in the living condition become entangled in the ice and frozen a considerable proportion are destroyed, but also that a very significant remnant persists, living in the ice for long periods, and perfectly able, when thawed out and placed under favorable conditions, to go on growing and proliferating just as before their hibernation. Whether they may retain life indefinitely or not in ice we do not know, as one hundred and three days is the longest period during which they have been kept frozen.

Here, then, as it seems to the writer, is the positive source of danger in the use of the Hudson River ice directly for drinking purposes, without some form of purification, at least, until it can be ascertained at what distance below Albany, or other towns whose sewage drains into the river near the ice-fields, a safe degree of bacterial purification of the water from natural causes may have occurred.

It will undoubtedly be asked, if typhoid bacilli have been detected in the Hudson River ice. They have not, nor is it very probable that they will be, unless, possibly, by chance. For, in the first place, the search for particular species of bacteria in a large dilution, such as exists here, is an almost hopeless task, unless the species sought for possesses biological characters and peculiarities in its mode of growth on the culture media or in its appearance under the microscope which would render its detection among many other forms comparatively easy. Unfortunately this is not the case with the typhoid bacillus, whose identification can be complete only after a long series of various tests, among which, as is well known to bacteriologists, the growth in potatoes is the most

characteristic. In the second place, its growth on gelatin plates is slow, and mixed, as it must be in sewage, with many other species which rapidly fluidify the gelatin, the opportunity for the development of its colonies is not very favorable. It has been detected in several instances in water suspected to be the cause of outbreaks of typhoid fever," but the conditions for its detection were more favorable than those which the Hudson River water presents with its large sewage dilution.

If we look, on the other hand, at the cases of typhoid fever as they are constantly occurring in New York and the adjacent towns where Hudson River ice is used, we do not find, and we should not expect to find, any marked excess of typhoid fever among those who habitually use ice for drinking purposes over those who do not, because the sanitary surroundings of the classes who do not habitually use ice for drinking purposes are so much less favorable, as a general rule, than those of the habitual ice-consumers, that other sources of infection, equally or even more efficient, would abundantly cover any revelation of the statistics.

If ice containing sewage contamination were the only means by which the typhoid-fever poison were conveyed from one individual to another, we might expect to find an indication of it in the statistics, but, unfortunately, it is not. We can only assume, as it seems to the writer, from what has been shown in these studies, that ice from some parts of the Hudson River, particularly near Albany, may contain, even in considerable numbers, living typhoid-fever bacilli, and so may furnish a means of propagating the disease. Whether this is a frequent or an infrequent occurrence we do not know. That it is not so important a factor in the transmission of the disease as to render the typhoid-fever statistics of New York worse than those of other towns whose residents use ice from cleaner sources, is certain.

But there is a considerable number of cases of typhoid fever, seen by every practising physician, in which the most painstaking examination of the sanitary surroundings of the victims and their personal contacts fails entirely to account for the occurrence of the disease. Some of these isolated cases of typhoid fever, whose origin is otherwise unaccountable, may well be due to the ingestion of typhoid bacilli from sewage-contaminated ice.

It should be remembered in considering this, as all other bacterial diseases, that the bacteria themselves are only one factor in determining the disease. There is to be taken into the account also the number of the bacteria, that is, the size of dose, and the condition of predisposition of the individual.

Now, unfortunately we know nothing about the number of typhoid bacilli which may be necessary to induce the disease in man, and we are equally ignorant concerning the nature of the predisposing conditions in the individual.

So that, if we sum up what we really know about the relations of Hudson River ice to typhoid fever, we can only say that the facts show that it is certain that the ice from some parts of the river must contain the bacteria of typhoid fever, and that these may be taken into the system with ice-water in a living condition. Whether the necessary relationship between the number of bacteria thus taken and the condition of predisposition of the individual occurs frequently or infrequently, or ever occurs at all, we cannot positively say, but the grave character of the disease should warn us against indifference in the matter, and such measures should be taken as will secure the consumer of ice against even the possibility of such infection.

Such considerations as these are apt to be met by those calling themselves, often somewhat ostentatiously, "common-sense people" by what may be called the "ancestor," or experience argument, which in this case would consist in saying that they and their fathers have used ice from the Hudson River all their lives, and have never suffered from typhoid fever. This view is one which ignores the necessary relationship between predisposition and determining cause, and the ever-increasing complexity of sanitary problems in large and growing towns. If the upper Hudson were still in the condition which prevailed when Hendrick Hudson made his exploratory voyage along its wellnigh tenantless shores, the ancestor argument might not be without a very modest value. But it should not be forgotten that with each new resident on the shores of the Hudson the increment of danger regularly increases.

With the bacteria of suppuration and pyæmia, the Staphylococcus pyogenes, the case is less serious. The contact of ice with wounds is not frequent, and when occurring may be guarded from possible ill-effects by antisepsis. The probability of infection in other ways from ice containing the staphylococcus is remote, but its presence would always suggest unpleasant and perhaps dangerous possibilities.

As to the pollution of the river water and the ice with this species, it is only necessary to recall how many cases of acute suppuration may be found at any time in a city of the size of Albany, and how much of the discharge is apt to find its way into the sewers without efficient disinfection, and to refer to the above experiments which show the resisting power of the bacteria to cold.

PRACTICAL SUGGESTIONS.—We now come to the practical measures which, as these studies seem to show, should be established in order to guard against a not only possible, but a very probable source of danger in the Hudson River ice. The writer is fully impressed, and wishes that those who may interest themselves in this matter should also be, with the great and important private and corporate interests which are involved in the supply and consumption of ice. Nor would the writer wish in any measure to suggest by these studies a curtailment in the consumption of ice, even for drinking purposes.

The great value of ice for actual consumption, especially in the summer months, in our city, among all classes, can hardly be overrated. The improper and inordinate use of ice for drinking purposes, which undoubtedly not infrequently occurs, is an abuse which belongs with other forms of intemperance and does not concern us here.

Now the measures which might be adopted in view of the present condition of affairs are of two kinds: First, such as would come under the supervision of those having the public health in charge; and second, those which belong in the province of the individual consumer.

In the first place, it would seem necessary that the State Board of Health, or some other authorized body, should have full control of the ice-harvesting fields, and, by a system of inspection not less strict than that which should exist in the care of the ordinary water-supply, determine which, if any, of the sources of ice-supply are so situated as to imperil the health of consumers of the ice. In view of what we know this would be comparatively simple in all cases except that of the Hudson River. Here it would be necessary to establish, by a most thorough scientific examination, the distances from all existing sources of sewage pollution at which it might be safely assumed that the water had freed itself from bacteria and other impurities sufficiently to form safe ice. It might in this way be possible to remove any chance of danger by permitting the questionable or bad ice to be sold only for cooling purposes, if such a classification is practicable, and thus not essentially interfere with the interests of the ice companies.

A compulsory system of disinfection of excreta in infectious diseases might be instituted here, as it is in other countries in which the purity of the water-supply is under constant supervision.

When we consider the measures which the individual consumer might adopt for the avoidance of possible danger from bad ice, it is evident, from what we have seen, that if he could be certain that his supply came only from

the lakes and ponds now used for this purpose, he would secure for himself, so far as the writer can judge, a fair degree of immunity from probable danger.

Remembering that the larger and more responsible ice companies do not, so far as the writer is aware, cut ice in the immediate vicinity of Albany, but at a considerable, and in the majority of cases at a great, distance below, the householder may eliminate to a certain extent his hazard by finding out, as accurately as possible, just what part of the river his ice comes from.

Whatever the source of ice-supply, however, the large excess in bacterial content which, in almost all cases, the snow-layer harbors over that of the transparent or sparsely bubbly ice, would render imperative the avoidance of the snow-layer for any but cooling purposes. But it should still be borne in mind that perfectly transparent ice may harbor very large numbers of living bacteria, if formed from water in which they were abundant.

A variety of devices can be adopted in the use of ice for the cooling of drinking-water, such as pitchers which contain separate receptacles for the ice, the cooling of the water in refrigerators, etc., which the ingenuity of the individual might suggest.

Or recourse may be had to artificial ice made from pure water, which, as a great deal of experience in the matter has shown, may be furnished at a cost not very greatly exceeding that at which the natural ice is delivered.

This is already done in some of the Continental cities. Thus in Berlin, Germany, a company exists which furnishes artificial ice made from distilled water, which, as would be expected, is almost absolutely free from contamination.

Such water as is furnished by the Hygeia Distilled Water Company in New York would, if artificially frozen, make a most admirable and safe substitute for the natural ice.

The writer must be content, in this series of pioneer studies on the impurities of ice, with having, by experimental means, endeavored to give definiteness and precision, not only to the problem in general, but to the detailed questions which arise in connection with the ice-supply of one particular town.

It would appear that we now know with tolerable certainty just what series of questions are to be answered, and investigations made, in order to decide upon the safety of any given source of ice-supply. But these detailed investigations can only be made under the sanction and direction of the public authorities.

It is unfortunate that a certain amount of perhaps entirely unjust opprobrium is now attached to all of the Hudson River ice, when it should perhaps belong only to that harvested in particular regions. It would therefore seem to the writer that it is greatly to the interest of the ice companies, as well as the public, that the State health authorities should take the matter of detailed examination of the Hudson River ice-fields at once in charge.

In conclusion, the writer wishes to express his sincere hope that this study may not be looked upon in a sensational light, nor regarded as a polemic against ice companies and dealers, or against the free and wonted use of ice, the incalculable usefulness of which is beyond question. A most thorough personal examination of the ice-harvesting and the practice and purpose of the more responsible dealers, lead to no other conclusion than that they are as desirous as could reasonably be expected of them to furnish a clean and pure product to the market, and, so far as facts have hitherto instructed them, have apparently done so. But in the clear light which the new methods of science throw upon the whole subject of important ice impurities, it seems necessary that a sweeping reform, in some respects, should speedily be brought about. This long and expensive series of researches has been carried out in the hope that in the light of its results the rapidly developing discipline of "preventive medicine" might find a plan of curtailing, in some degree, the number of annual victims to preventible disease.

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THE TREATMENT OF RUPTURED AND DIVIDED TENDONS.[1]

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MR. CHAIRMAN AND GENTLEMEN: At the request of your honorable chairman, I present to you this short paper, and a few cases which will serve to illustrate the results of suture of tendons.

I am disappointed in not being able to present some case operated upon by myself, but the fact that I have had only four days' notice in which to prepare this and collect the cases, and that those operated upon by me were unwilling to come here, I trust, will be sufficient excuse for this shortcoming. Those that I will present were done at the Chambers Street Hospital under my direction, by a very competent house staff, and will, in a measure, serve to illustrate any special points in the treatment. The title of this paper is "The Rupture and Division of Tendons and their Treatment."

For convenience these injuries, like fractures, are divided into *simple* and *compound*. The *simple* being those with no external wound or atmospheric communication, and the compound being those in which such external communication exists.

The first class are important, because of the deformity and disability that are likely to ensue; and the second, because, in addition to these, we have often to deal with a grade of inflammation that may not only destroy the usefulness of the part involved, but in extreme cases may end in the death of the patient.

These injuries occur so frequently and are so often causes of *permanent* deformity and disability, that it is quite important that the best method for their relief should be generally understood. Probably no tissue in the body, with the exception of the delicately constructed serous membranes, is so prone to inflammation as the synovial membranes lining the joints, and that forming the sheaths of tendons.

This fact will account in a great measure for many of the bad results following injuries of this kind. The severity of the inflammatory process which sometimes follows such an injury is due in a measure to the extent of surface involved, for it is estimated that, on an average, tendinous sheaths, of which that of the finger is an example, presents a surface when dissected and spread out

[1] Read before the Surgical Section of the New York Academy of Medicine, March 14, 1887.

of from ten to twenty square inches. The fact that the inner surface of the sheath is constantly moistened with a fluid, the synovia, which is especially liable to fermentation and decomposition when exposed to atmospheric influence, will be sufficient to account for the frequency of inflammation and suppuration after injuries of this kind.

From the *manner* in which inflammation commences in these wounds, as it often does even now in the days of antiseptic surgery, it seems that it must rest in the fact that the antisepsis is imperfect.

tendon a focus of inflammation has started, as indicated by a point of tenderness, heat, swelling, pain, and redness. In looking for a cause for this, it appears that the pump-like action of the divided tendon, working in its sheath, draws the material containing the germs into the sheath up as far as the original retraction takes place, or else that some of this material came in contact with the tendon at the time of the injury, and was then carried by it up to this point, or that it was pressed up by the application of the Esmarch bandage.

It is quite clearly demonstrated that divided tendons

No.	Cause.	Tendons.	Suture.	Inflammation.	Anæsthetic.	Results.
1	Glass.	Flexor carpi radialis; palmaris longus; flexor sublimis.	Catgut.	Cellulitis.	Ether.	Motion good; secondary union; three weeks.
2	Knife.	Ligamentum patellæ.	Catgut.	No inflammation.	Ether.	Motion perfect; primary union; five weeks.
3	Glass.	Flexor carpi ulnaris; flexor sublimis digitorum.	Catgut.	Inflammation.	Ether.	Discharged cured; seven weeks.
4	Direct violence; simple.	Quadriceps; extensor tendon.	Catgut.	Superficial suppuration.	Ether.	One month; perfect motion and union.
5	Unknown.	Flexor sublimis digitorum.	.....	No inflammation.	Ether.	Moderate use; one month.
6	Glass.	Extensor tendon of thumb.	Catgut.	Cellulitis.	Cocaine.	Motion good; secondary union; three weeks.
7	Glass.	Extensor of ring finger.	Catgut.	No inflammation.	Cocaine.	Motion perfect; primary union; two weeks.
8	Glass.	Extensor of index finger.	Silkworm-gut.	No inflammation.	Cocaine.	Motion perfect; primary union; two weeks.
9	Glass.	Extensor secundi; internodii pollicis.	Catgut.	Cellulitis.	Cocaine.	Motion good; secondary union; six weeks.
10	Glass.	All flexors of fingers; flexor carpi ulnaris; ulnar and median nerves.	Catgut.	Cellulitis.	Ether.	Motion good; sensation returned; secondary union; six weeks.
11	Glass.	Flexor carpi ulnaris; ulnar nerve.	Catgut.	No inflammation.	Cocaine.	Motion perfect; secondary union; anæsthesia; two weeks.
12	Knife.	Two flexors of index finger.	Catgut.	No inflammation.	Cocaine.	Motion good; primary union; two months.
13	Glass.	Extensor tendons of first, second, and third fingers.	Catgut.	No inflammation.	Cocaine.	Motion perfect; primary union; three weeks.
14	Glass.	Superficial flexors of third, fourth, and fifth fingers; in forearm.	Catgut.	No inflammation.	Ether.	Motion good; primary union; three weeks.
15	Glass.	Extensors of thumb, all.	Catgut.	Cellulitis.	Cocaine.	Motion fair, two weeks; secondary union; perfect motion, six months.
16	Razor.	All extensors of fingers and thumb.	No suture; splints used.	Cellulitis.	None.	Motion in fingers, five weeks; fair; motion in thumb, none.
17	Knife.	Belly of extensor carpi radialis.	Catgut.	No inflammation.	None.	Motion good; primary union; three weeks.
18	Glass.	Superficial and deep flexors of index and middle fingers.	Silk and catgut.	Cellulitis.	Ether.	Fingers dropped back, eleven days; slight flexion, seven weeks.
19	Glass.	Extensor tendon of middle finger.	Silkworm-gut.	No inflammation.	Cocaine.	Motion perfect; primary union; three weeks.
20	Razor.	Knee-joint opened; quadriceps; extensor tendon.	One catgut in muscle, four silkworm-gut sutures in tendon.	No inflammation.	Ether.	Motion good; primary union; two weeks.
21	Glass.	Extensor carpi radialis longior.	Catgut.	No inflammation.	Ether.	Discharged cured; primary union; moderate motion; six weeks.
22	Razor.	Deep and superficial flexors of ring finger.	Catgut.	Tenosynovitis, cellulitis.	Ether.	Discharged cured; six weeks.
23	Knife.	Tendo-Achillis.	Catgut.	No inflammation.	Ether.	Motion perfect; primary union; five weeks.
24	Glass.	All extensors on dorsum of wrist except those of thumb.	Double silk.	Cellulitis.	Ether.	Motion perfect; five weeks; secondary union.
25	Glass.	Six flexor tendons at wrist; ulnar artery; ulnar nerve.	Catgut.	Cellulitis.	Ether.	No union, two weeks; full motion, one year.
26	Glass.	Extensor tendons of ring and little fingers.	Catgut.	Inflammation.	Ether.	Secondary union; result not given.
27	Glass.	Flexor of fifth finger.	Catgut.	Inflammation.	Ether.	No union in tendon; secondary union in wound.
28	Glass.	Flexors of index finger.	Old wound tendons dissected up and sutured; catgut.	Inflammation.	Ether.	No power of flexion; primary union in wound.
29	Glass.	Superficial flexor tendons of hand; palmaris longus.	Catgut.	Inflammation.	Ether.	Discharged cured; motion not stated.
30	Razor.	Superficial and deep flexors of hand.	Tore sutures; suicidal mania; catgut.	No cellulitis.	Ether.	Limited motion; one month.

We have been struck with the fact that the beginning of the inflammation is not directly in the wound itself, but commences in the sheath of the tendon at a point some distance from the point of injury. For instance, a tendon is divided in the palm of the hand from an incised wound—this is thoroughly cleansed, washed with soap and water, and the wound and surroundings irrigated with bichloride solution, 1 to 1,000, and then by the usual means the separated ends of the tendon are brought together with sutures (catgut being that generally employed), and the external wound is sutured and dressed antiseptically. In a few days it is noticed that farther up the sheath of the

in an open wound will rarely unite if left to themselves, and that something must necessarily be done if a good result be desired.

We cannot depend upon the ordinary plans of treatment employed in the simple forms.

Union in the simple and compound forms takes place as differently as does union in simple and compound fractures. The process of repair in the simple form consists mainly in a low grade of inflammatory action, in which the interspace is filled up with plastic matter which soon becomes organized into a tendinous band. This takes place in from six to twenty-one days, depending

upon the size, situation, and amount of separation. The process of repair in the compound variety takes place if only a punctured wound or subcutaneous division be present, usually as in the simple form. Generally, however, the union is by granulation, and with involvement of much of the surrounding tissue, which becomes matted down and bound with the tendon into the cicatrix.

The process of repair in suturing of tendons, as done under all antiseptic precautions, is reduced practically to the same point as in the simple subcutaneous rupture, and shows even better results, because of the closer approximation of the divided ends.

In the treatment of these injuries several questions present themselves. In the simple form, or rupture without atmospheric communication, is it necessary, or are we justified in opening the sheaths and suturing the tendon? Do the results of the rest and position plan of treatment, as accomplished by splints, etc., indicate that it is necessary to do this?

Then, in the compound form, is it not possible that the suturing, etc., can be done with such thorough antisepsis that the inflammatory trouble may be avoided? In simple rupture almost all of the authorities seem to agree that rest and position are sufficient. Yet it would seem that a better result, and certainly closer approximation, could be obtained by the use of the suture.

In the compound variety the point of inflammation would suggest the plan of treatment of a more thorough irrigation of the sheath of the tendon and of the adjacent tissues. A small English catheter with a syringe attachment will accomplish this, the solution employed being bichloride, 1 to 1,000, except in the quadriceps extensor tendon, which opens into the knee-joint, then 1 to 5,000 should be used.

The question comes up of what is the best material for uniting the divided tendons? Various substances have been employed, namely, catgut, horsehair, silk, silver wire, and, finally, the so-called silkworm-gut.

Probably catgut is more frequently employed than any of these. Some object to its use because they say it melts down too quickly before union can take place, others think it is the source of inflammation in the sheath from the decomposition which must necessarily take place for its absorption.

Silver wire is recommended by many in preference to catgut. We have recently used the silkworm-gut for this purpose at the Chambers Street Hospital, and it seems to be the best material yet used for this purpose, from the fact that it is not absorbed too quickly, if at all, and is non-irritating.

I am able to present the accompanying statistics, through the assistance of Dr. Paul E. Tiemann, of the Chambers Street Hospital, and Dr. C. F. Stokes, late of Bellevue Hospital, and Dr. J. L. Adams, of the New York Hospital. From the imperfect records to be found in these hospitals, with the exception of the Chambers Street Hospital, it was almost impossible to get any definite idea of the results in these cases.

The plan of treatment recommended in the compound form is, first, the thorough cleansing of the part and irrigation of the sheath with the catheter, the use of cocaine and the Esmarch bandage, and the use of the silkworm-gut suture, two sutures being necessary in the average tendon, one being carried transversely through the tendon, and the other antero-posteriorly.

TREATMENT OF CYSTIC TUMORS OF THE OVARY BY ELECTROLYSIS.—Dr. F. Semeleder has published a memoir read by him before the Academy of Medicine of Mexico, entitled "Forty-five Cases of Ovarian and Parovarian Cysts treated by Electrolysis." The results obtained were very satisfactory, and the author believes that a trial should be made of this method in all cases before resorting to operative measures.

CASE OF DERMATITIS HERPETIFORMIS RESEMBLING ERYTHEMA MULTIFORME.

BY LOUIS A. DUHRING, M.D.,

PROFESSOR OF SKIN DISEASES IN THE UNIVERSITY OF PENNSYLVANIA.

IN January, 1884, I was requested by Dr. Mitchell, of Elkton, Md., to see a case of chronic cutaneous disease, exhibiting peculiarities which made the diagnosis difficult. The patient was a man seventy years of age, a lawyer by profession, neurotic, and in poor general health.

The disease had existed a year or longer, and was characterized by a profuse, multiform, general eruption, with violent itching and burning. None of the various plans of treatment previously employed had afforded any relief.

From his physician I further learned that the lesions of the skin had varied in character from time to time, having been sometimes vesicular, and on other occasions erythematous; while more frequently there had existed a combination of these elementary forms. Itching had always been a marked feature.

When I first saw the case the whole general surface was the seat of an abundant, diffuse eruption, characterized by ill-defined, marginate, annular, and circinate erythematous patches, upon which, in many places, were more or less well-formed, variously sized and shaped papulo-vesicular and vesicular lesions. The skin showed, moreover, signs of subacute and chronic inflammation, in the form of thickening, pigmentation, excoriations, and blood-crusts, as well as lesions in all stages of development. The erythematous patches predominated, and had coalesced to such an extent that their outline was only in places defined, but everywhere could be seen a disposition to form marginate shapes, as in erythema multiforme. The patches were on a level with the surrounding skin or were slightly elevated, and were acutely congested and infiltrated with inflammatory products, partly plastic and partly serous in nature. In color they were bright-red or violaceous-red, according to their age, and were mottled, owing largely to the fact of their having run together. The whole general surface, but especially the trunk, was affected in this manner; in addition to which, seated upon these patches were, for the most part, flat, small and large papulo-vesicular and vesicular lesions, here and there well defined, elsewhere imperfectly developed or abortive. The picture, as might be imagined, suggested an extensive diffuse or generalized "chronic" erythema multiforme, with papulo-erythemata, papulo-vesicules, and vesicules. The herpetic element was striking, as shown by the grouping and by the marginate peripheral extension of the process. Here and there the lesions were grouped in an ill-defined circinate form, as in tinea circinata, some of the patches being small, others large. In most localities they were so multiform and had merged one with another so extensively that the elementary characters were to be noted only on close inspection. Scratch-marks, excoriations, and small and large blood-crusts were everywhere present, testifying to the intense itching which had been experienced. The patient stated that this had always been a distressing symptom, was subject to exacerbations, and that it was always at its height during the time a new crop of lesions were developing, occupying usually about a week. The pigmentation was of a dirty-yellowish, muddy, or dusky hue, and was both localized and general. It called to mind that seen in the later stages of extensive pityriasis rosea of the trunk.

From a diagnostic stand-point the eruption resembled diffuse, aggravated erythema multiforme of long standing. Herpes iris was not suggested, the erythematous element prevailing. It possessed a history, however, as well as features which precluded it from being classed here. The chronicity of the process, the tendency to repeated relapses, the obstinacy of the disease, together with the violent itching and burning, would not permit it to be considered as a case of this disease, at least as

this affection is now defined. At the same time, I would state that the case possessed certain features in common with this disease, and certainly bore more resemblance to it than to any other well-known cutaneous disease. And this brings me to a question that has presented itself on several occasions in studying dermatitis herpetiformis, namely, where (in certain cases) shall the line be drawn separating this disease from other well-defined diseases? Shall, for example, the case I have just cited be regarded as erythema multiforme or shall it be grouped under the title dermatitis herpetiformis, where I have placed it? Shall a new definition be framed for erythema multiforme, to include also a *chronic* process, in order that this and similar cases may be grouped under this title; or shall we regard such instances as too far removed from erythema multiforme to be classed here, and relegate them to another group? The line separating one disease of the skin from another in some instances is ill-defined, and there are cases occasionally encountered which may as properly be classified under one head as another.

Instances of the kind are met with from time to time with eczema and psoriasis, pityriasis rubra and psoriasis, and, to pass to more chronic forms of inflammation, with lupus erythematosus and lupus vulgaris. They exhibit symptoms common to both diseases and defy precise, schematic classification.

The case under discussion, however, I think, may more properly be regarded as an example of the erythematous variety of dermatitis herpetiformis than of erythema multiforme, especially if we take into consideration the history of the disease. In some respects it resembles that reported by Jarisch as "herpes iris," and referred to by me in the article entitled "Preliminary Note on the Relation of Dermatitis Herpetiformis to Herpes Gestationis and other similar Forms of Disease" (*Medical News*, November 22, 1884).

I saw the patient on several occasions during the subsequent six months, his condition having somewhat improved, although he still suffered much. It is not necessary to enumerate the various internal and external remedies that were employed; suffice it to say that they were such as might have been prescribed for chronic universal erythematous eczema. Notwithstanding the treatment the disease persisted, and relapses, though milder in form, occurred as before.

I report the case, because it is interesting as portraying an unusual manifestation of the disease, namely, one bearing a resemblance to erythema multiforme. In a former paper I alluded to the possible relationship between these two diseases, and this case would go to show that the causes at work in these diseases are capable of giving rise to similar cutaneous lesions. Additional clinical information, however, is needed concerning unusual forms of both diseases before definite views can be expressed, and it is to be hoped that the experience on this point of other dermatologists will be forthcoming.

THE SOUTH AFRICAN LADIES are so modest that they will seldom permit a physical examination of the chest to be made by a male physician. There would seem to be a wide field in that country for female practitioners.

A CONVENIENT VAGINAL DOUCHE.—Dr. Lefour, of Bordeaux, describes an apparatus designed by himself for use in antiseptic douching of the vagina. It consists simply of two metallic tubes passing through a cork, which may be fitted in any bottle. One tube passes just through the cork, and the other is long enough to reach to the bottom of an ordinary pint bottle. The latter serves for the admission of air, while the former is the delivery tube. The bottle is filled with the antiseptic fluid, the rubber cork through which the tubes pass is fitted into its neck, and it is then inverted and the liquid flows out. A rubber tube with vaginal nozzle is fastened to the metal delivery tube.

Clinical Department.

EXTRA-UTERINE PREGNANCY, WITH PERITONITIS—RECOVERY.

DR. N. P. WARNER, of New Woodstock, N. J., reports the following case: Mrs. C.——, aged forty, married ten years, gave an incomplete history of a miscarriage at second month, accompanied by pelvic inflammation, occurring about four years ago. Aside from this she was never pregnant. Menstruated last on September 15, 1885, and at the date of my first visit, November 12th, she supposed herself pregnant. She was then suffering from intense pain in the region of the right ovary, which came on suddenly as she was rising from her bed. External examination showed a slight prominence over the seat of pain, and some distention and tenderness of entire abdomen. Hypodermic injection of morphia and hot fomentation soon afforded relief.

Ten days after the first attack, as the patient was using the vessel, there was a return of the pain, although not so severe as at first. At this time a vaginal examination was made, which, however, was not very thorough, owing to the tenderness of the parts.

November 16th, patient had a slight return of pain, accompanied by a rather free discharge of blood from vagina, the discharge lasting a few hours.

December 7th, while using vessel for relief of bladder, she was again seized with cramping pains in right of abdomen.

During the following month the patient experienced some pain and soreness in the right iliac region, and once during that time there had been a flow of blood from the vagina.

On December 7th a more thorough examination was made. The os uteri was enlarged, and presented the soft, velvety feeling of the pregnant womb. There was a slight varicose condition of the lower portion of the vagina, the mucous membrane of which was of the lilac color so peculiar to the pregnant state.

Bimanual examination showed the uterus to be pushed over to the left of the pelvis by a tumor which occupied the pelvic cavity to the right. The tumor presented a smooth surface, was not very sensitive to pressure, and seemed attached to, but not a part of, the uterus. It gave an indistinct sense of fluctuation. There had been morning sickness and the breasts were enlarged and painful. Dr. Warner believed that he had to deal with an extra-uterine pregnancy, and he told the patient that he desired to make another examination after an interval of a few days, as there was still considerable tenderness about the abdomen and pelvis. She would not then consent to further examination, and the writer saw no more of the case until December 20th, when he was summoned in great haste at about 6 A.M. On his arrival he was informed that the patient, on arising in the morning to relieve the bladder, had been suddenly seized with sharp pain in lower and right side of the abdomen. She had been lifted back to her bed, and she now lay there on the right side, with thighs flexed and body bent forward, moaning with pain and nearly unconscious. The face was very pale, and gave indication of extreme suffering. The surface of the body was cold and clammy. Radial pulse hardly perceptible. Rupture of sac formed by extra-uterine pregnancy was suspected, and morphine and brandy were given hypodermically, and hot applications were made to the extremities and along the spine. The patient was unable to swallow, being in a semi-comatose condition. There was vomiting at short intervals. Respiration was rapid and feeble. The abdomen was distended and tympanitic, and the tumor in the right inguinal region was quite perceptible above Poupart's ligament. At the end of two hours the pulse became stronger, and was then 146 per minute; axillary temperature, 97°. The extremities and surface of the body

indicated an improved circulation, and at 10 A.M. the patient was gradually rallying from the collapse and complained of intense pain and tenderness over entire abdomen. Warm cloths were applied to abdomen, and gave some relief to the patient. The following morning the condition was but slightly changed. The urine was passed naturally. In the afternoon the patient was suffering extreme pain, and showed symptoms of collapse again; there was occasional vomiting of a dark, grumous material. Morphine, veratrum viride, and brandy were given hypodermically. The entire abdomen was painted with tincture of iodine. At 6 P.M.: Temperature, 102° F.; pulse, 140, and more steady; the general appearance was somewhat improved. The next day there was occasional vomiting, but most of the food was retained. The abdomen was painted again with iodine. Patient felt comfortable.

The abdominal tenderness, pain, and distention gradually subsided, and improvement was now steady. With the subsidence of the abdominal distention the tumor could be readily mapped out, and was unmistakably increasing in size, and now extended above the anterior superior spinous process of the ilium, and a little to the left of the median line. It was not painful to the touch, except at the side adjoining the uterus. The uterus and tumor were readily distinguished as separate bodies. The os uteri occupied the anterior and left of the vagina, and the fundus could be felt above the pubis and to the left of the median line. The probe showed the uterine cavity to be two and a half inches in length. The tumor was slightly movable, rather tense, and gave, as before, an indistinct sense of fluctuation. The surface of tumor above was smooth and oval, but examination per vagina and rectum showed an uneven, rather unyielding, but not hard surface.

At this time, January 5th, Dr. I. N. Goff saw the case in consultation, and fully concurred in the diagnosis. A long hypodermic needle was passed through the vaginal vault into the tumor, and on withdrawing the piston the syringe filled with bright blood. A fine needle was then attached to the syringe, and passed into the tumor at its most prominent point through the abdominal walls. The patient was very emaciated, and the abdominal walls quite thin. On withdrawing the piston the syringe this time filled with light-colored liquid, which was supposed to be amniotic. No evidences of decomposition were found in the fluids removed by the hypodermic needle. In examining the blood removed through the vagina a formation was discovered which very closely resembled a placental villus. The diagnosis of extra-uterine pregnancy being established and the fœtus being still living, an injection of twenty drops of tincture of iodine was made into the tumor, with a hypodermic syringe, through the roof of the vagina. No very noticeable effect followed immediately upon the injection of the iodine, although it seemed as though, for a few days, there was a slight diminution in the size of the tumor.

One week after the injection of the iodine an exploratory puncture was made with the hypodermic syringe; and a dark-colored decomposing fluid removed from the tumor. Dr. Goff again saw the case at this time. The patient was anæsthetized and a median-sized trocar was passed into the tumor through the vaginal vault. Immediately there was a discharge of dark, thick, and very offensive fluid. The cannula, being provided with a flange, was left in the tumor for forty-eight hours, during which time the discharge continued, but not freely. After further consultation with Dr. Goff, it was determined to enlarge the opening made by the trocar and endeavor to remove the contents of the sac. On February 1st, assisted by Drs. Goff and Potter, Dr. Warner undertook the operation. The patient was anæsthetized and placed in the lithotomy position. The bladder having been emptied, a moderate-sized ring-pessary was introduced to aid in distending the upper part of the vagina, and the perineum was well drawn back by a Sims speculum. A director was passed into the sac through the opening made by the trochar, and along this a probe-pointed bistoury was passed and the opening was slightly enlarged by cutting toward the right side and backward. By means of dressing-forceps and a uterine dilator the opening was enlarged until the index-finger could be passed into the sac. The distance from the roof of the vagina to the entrance into the sac was about one and a half inches. In an attempt made to enlarge the opening so as to introduce two fingers through it, the bladder was wounded, or, rather, torn into, although but little force was being used at the time. On account of the distance from vagina to entrance of sac and the injury to the bladder, it was thought advisable to make no further attempt at that time to remove the fœtus entire. A large drainage-tube was placed in the sac, which was thoroughly cleansed with injections of tepid carbolic-acid water.

The patient rallied well from the anæsthetic. Two days afterward one of the lower extremities of a decomposing fœtus was removed, and within a week the remainder of the fœtus was taken away in pieces. The parts removed corresponded in size to a fœtus of about twelve to fourteen weeks. A catheter was kept in the bladder for two weeks, at the end of which time the urine passed naturally and the injury to that organ had entirely healed.

The sac was syringed out daily with a weak solution of carbolic acid. The discharge, at first dark and offensive, gradually became more purulent. Patient improved steadily. By March 1st the tumor was about the size of a goose's egg, and discharged only a small amount of healthy pus. Some trouble was experienced in keeping the drainage-tube in place, but this was overcome by attaching a button to the vaginal portion, which rested on the perineum and prevented the tube from dropping out. The patient menstruated on March 14th, for the first time since September 15th. For a few months menstruation was accompanied by severe pain in the right ovarian region, but at the present time, one year after the removal of the fœtus, the patient says that menstruation is no more painful than before her sickness, and she is apparently in the enjoyment of perfect health.

CARLSBAD WATERS IN THE TREATMENT OF GOUT AND BILIOUSNESS.

DR. J. B. POTSDAMER, of Philadelphia, reports the following cases: Mr. B. J——, aged sixty-nine, had an attack of renal colic about twenty-two years ago. Oxalate crystals appeared in the urine. For a time his life was despaired of. Fifteen years ago he began to grow stouter, and had periods of depression. He consulted a physician at that time, who advised horseback exercise, otherwise serious results might follow. This instruction was not carried out. Eleven years ago, while being treated for a Colles fracture of the left side, he had an attack of inflammatory rheumatism, confined to the right shoulder-joint. Shortly after this he had another attack of renal colic, not as severe as the first one. Since 1860 he has had occasional attacks of muscular rheumatism, at times quite severe. In the early part of last year he began to complain of pain in the thumbs, which were swollen. He had pain in the toes, but not so marked. The pain in the thumbs kept him awake at night. He takes very little exercise. Diagnosis: Gout. He was put on a course of iodide of potassium and the wine of colchicum seed, without beneficial results, although pursued for a long time. The salicylates were then tried, with the same result. Both the above methods were pursued in conjunction with a regulated diet. He was then placed on Carlsbad waters, the Sprudel being used. He drank three or four wineglassfuls a day, the water always being heated first. Beneficial results were noticed before beginning the second bottle, as the patient was able to

sleep at night. Improvement continued, and after six bottles had been used the pain was gone and the swelling disappeared. At the present writing, six weeks after this treatment was begun, the patient is perfectly well, having used but ten bottles of the water. The only restriction placed upon Mr. B. J——, while drinking the Carlsbad waters, was that he was not to drink any malt, and very little of spirituous, liquors. This he did not carry out, as he drank about a glass of beer a day.

Mrs. S. B——, aged forty-five, of full habit. Has had frequent attacks of biliousness. She was first seen in the early part of last fall. Symptoms as follows: Complexion muddy; tongue coated with yellowish fur; bitter taste in the mouth; appetite poor; bowels constipated; some dizziness. Her feet are somewhat swollen. Small doses of calomel were given, followed by a saline purge. Bitter tonics were then administered. Jalap, fifteen grains, and cream of tartar, one ounce, were given about every four days, to keep the bowels open and to diminish the swelling of the feet. The patient improved, but about six weeks later the writer was again sent for, and found a recurrence of the above symptoms. On physical examination the liver was found to be considerably enlarged. Carlsbad Sprudel water was ordered, in wineglassful doses, four times a day, *to be taken cold*. The patient soon began to improve. After taking five bottles, she is now well. The swelling of the feet has disappeared, and the bowels are regular.

Mr. S. H——, aged forty, rather plethoric, exhibited symptoms similar to those of Mrs. B——, but the feet were not swollen, and the liver not enlarged. The same treatment was pursued, with a regulated diet; and the patient recovered after taking three bottles.

Progress of Medical Science.

THE INJURIOUS EFFECTS OF BLISTERS.—Dr. Wyss, of Geneva, has published a warning against the use of blisters. He says that, although devoid of real remedial properties, they are still daily prescribed, perhaps more with the view of sustaining the hopes and confidence of the patient, and of gaining time for the natural process of recovery, than in the expectation of actual benefit. The long experience of an extensive practice leads him to consider blisters an unnecessary cruelty to the patients, which ought entirely to be discarded. He has employed blisters in the treatment of pneumonia, pleurisy, sciatica, and other diseases, but failed in ever observing the slightest benefit from their use. On the contrary, he found them more or less injurious. He thinks that blisters disturb the sleep of the patient in want of restorative rest; they impair in many irritable patients the urinary organs, and they frequently bring on obstinate cutaneous eruptions. Moreover, they cause actual harm by almost invariably increasing the fever in already feverish patients, and may thus seriously affect the general condition.—*Der Fortschritt*, January 5, 1887.

ANTIPYRIN IN MIGRAINE.—Dr. Sprimon has stated in a Russian medical journal, quoted in the *London Medical Record*, January 15, 1887, that he uses antipyrin in all cases of hemicrania, and, as a rule, obtains excellent results. Given at the height of a fit, the drug only partially relieves pain, but does not shorten the duration of symptoms (especially when the patient remains on his legs all the while). But when administered during the period of prodromal phenomena, antipyrin almost invariably cuts short the paroxysm within an hour, and allows the patient to immediately resume his occupations. The dose required is one scruple. In delicate persons, or in those liable to giddiness, it is better to divide the dose in two parts and to give the second portion (if necessary) about half an hour after the first. In the *Centralblatt für klinische Medisin*, No. 45, 1886, Dr. Ungar also states that antipyrin, given in the dose of sixteen to twenty-four grains in the beginning of a paroxysm, acts better than any other symptomatic means used for the affection in question. In some cases, however, the drug (like salicylate of soda) remains inactive. According to the *London Record* of April 15, 1886, Professors M. A. Khomïakoff and I. M. Lvoff, of Kazan, were the first to recommend antipyrin as an excellent means for hemicrania, as well as for headache generally. This would appear to antedate the first publication of Dr. John B. White, of this city, in the *Medical News* of July 10, 1886. But as Dr. White had used and recommended antipyrin in various forms of headache for some two years before that time (THE MEDICAL RECORD, September 11, 1886), the credit of priority over the Russian physicians probably belongs to him. In any event, antipyrin has now received so many indorsements from different medical men that it may be placed once for all on the list of symptomatic palliatives in most forms of headache.

THE ACTION OF PYRIDINE ON THE FUNCTION OF RESPIRATION.—In health and in disease (phthisis, pleurisy, chlorosis, etc.) inhalations of pyridine have the effect of diminishing the quantity of air respired in a fixed period of time. Notwithstanding this, the feeling of need of air diminishes. According to Dr. B. Silva, the respiratory curve shows that in the healthy man pyridine produces at first an expiratory dyspnœa; the respiration then becomes less frequent, irregular, preventing true periods and sometimes long intervals of apnœa. After the inhalation the respiration remains less frequent and less full, with occasional deep inspirations. Sometimes sleep intervenes, and the periodic respiration is then more evident. The inhalation always causes abundant salivation, preceded by a bitter taste in the mouth and roughness of the throat, with constant desire to spit; the nose also runs. The respiratory curves obtained by exciting the nostrils by the faradic current are very similar to those obtained by pyridine. The nose runs, there is salivation, expiratory arrest, the respiration is disturbed and becomes sometimes periodic, and, lastly, after the excitement has ceased, there are the occasional deep inspirations and those periods of apnœa as seen after the inhalation of pyridine. But sleep and the sense of less need of air are wanting. The author therefore believes that pyridine acts on the respiratory centre by means of the trigeminus chiefly, but that the pneumogastric also is affected. The influence of pyridine on the pneumogastric is also shown by the increased secretion from the bronchial tubes. Pyridine therefore produces irritation of the terminal nasal fibres of the trigeminus, and hence running of the nose, salivation, and expiratory dyspnœa. The action on the bulb by means of this nerve is evident, and the respiratory centre is first stimulated and then paralyzed. This is shown by the diminution of the quantity of the air respired, and by the respiration becoming periodic and superficial. But the action of pyridine is not limited to the respiratory centre in the bulb, but also extends to the higher centre of the cortex, since it produces sleep; and this again contributes to give a periodic type to the respiration and to diminish the quantity of air respired in a given time.—*The London Medical Record*, February 15, 1887.

PULVERIZED SPLEEN IN CHLOROSIS.—The German medical papers quote some observations made by Dr. Predazzi, at Professor Maragliano's request, on the value of treating chlorotic patients with an emulsion of pulverized spleen, bitter almonds, and brandy. In the five cases in which this was adopted, rapid improvement took place both in the general condition of the patients and in the physical signs; that is to say, the number of red blood-corpuscles was increased, as also the arterial tension and the body-weight. The author does not attempt any explanation of the action of this singular remedy. The quantity of "pulv. splenic." given daily was about five ounces, and it was ordered at meal-times.

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THE REGISTRATION OF CONTAGIOUS DISEASES.

WE referred recently to the fact that physicians very frequently neglect to comply with the law requiring a notification to the health authorities of every case of contagious disease occurring in their practice. It is not in the matter of reporting contagious diseases only that physicians are negligent, but they are almost equally remiss in regard to certificates of birth.

We do not wish to invent excuses for this neglect of their plain duty on the part of members of our profession in this city, but it will do no harm to look a little into the causes of this neglect, to see if there may not be some remedy for it.

In the first place, forgetfulness will account for many cases of omission in this respect. The physician has no intention of evading the law, and he really means to report his cases, both of contagious diseases and of births. But somehow the days slip by, other things come along to occupy the attention, the duty of reporting the case is forgotten, and one more glittering stone is added to the mosaic of that populous region which is said to be paved with good intentions.

Another, and perhaps more frequent, cause of this neglect is a certain feeling that the law is unjust in that it demands labor on the part of the physician for which he receives no compensation. He is put to considerable labor and a slight expense for which he is not requited, but the omission of which exposes him to the penalty of a fine. And it must be said that the Board of Health does not always second the efforts of those who really wish to comply with its demands, for we have known of instances in which physicians have applied again and again for the necessary blank forms and have never received them. Very naturally they are discouraged by such treatment, and think that the matter can be of but little moment if the health authorities themselves will not aid them to so slight an extent.

This is really a more serious matter than the thoughtless are wont to suppose. In the first place, it renders the statistics of the Health Department worse than useless, for it causes them to be misleading. In the case to which we referred in a previous issue, the figures of the Board of Health made it appear that the mortality from typhoid fever in this city was over forty-one per cent., but everyone knows that this percentage is much too high. Again, the failure to report every case of contagious disease undoubtedly increases the danger of epidemics. And, finally, as regards the failure to report births, a real injury may be done to the child, as in after-years the individual may suffer great loss from being unable to produce a record of his birth.

There is, however, a simple remedy which would obviate all this. Let the authorities pay the physician for his trouble in making a report, and we venture to say that both the forgetful and the intentionally careless would vie with the thoroughly conscientious in notifying promptly the Board of Health of all cases of this nature occurring in their practice. This is done in some of the States, and is, we are informed, found to work well. The compensation need not be large, for the physician is willing to do his share if only he feels that he is not being imposed upon. And then the penalties for non-compliance with the law can be more strictly, and more justly, enforced. Such a plan would have the effect, at least, of making the statistics of the Health Department, as they should be, of real scientific value.

THE TREATMENT OF NEURALGIA BY CHLOROFORM DIFFUSION.

THE treatment of neuralgia is often so unsatisfactory that any plan that promises to remove the difficulty even in a measure is worthy of consideration. No excuse, therefore, is necessary for calling the attention of the readers of THE MEDICAL RECORD to a method recently proposed by Adamkiewicz for the relief of this troublesome affection (*La Riforma Medica*, No. 25, 1887).

The experiments of Wagner had shown that, if the positive electrode were impregnated with a solution of cocaine, the passage of a constant current produced an intense anæsthesia of the skin. This fact led the author to try what effects could be obtained by chloroform applied in the same way. He found that simply saturating the electrode was insufficient, as the substance evaporated so rapidly that frequent renewals were necessary, thus causing interruptions in the application. He therefore devised an electrode containing a receptacle for the chloroform, which was allowed to escape only very slowly, so as to keep the surface of the electrode constantly moist. This "diffusion electrode," as it is called, consists of a metallic cylinder, containing the chloroform, and closed by a diaphragm of carbon, which is a good conductor and at the same time allows the drug to leak out slowly.

The cathode is applied at an indifferent point, while the anode, the diffusion electrode, is placed over the seat of pain. The patient complains at first of a slight burning sensation, but this gradually passes away as anæsthesia becomes complete. It is important not to employ a current of too great intensity. It is best to begin with a current of moderate intensity and to increase it gradually until the limit of tolerance is reached. This limit is usually from three to seven milliampères.

This method has given very satisfactory results in neuralgia of the fifth nerve and its branches, in intercostal neuralgia, and in rheumatic pains. It would appear, also, to be a convenient means of producing local anæsthesia, as the anæsthetic area extends for a considerable distance around the point of application of the electrode.

THE POSITION TAKEN DURING SLEEP.

A VERY large number of adults form the habit of sleeping in one particular position, such as lying upon their right or left side. A smaller number sleep upon the back. Some persons sleep with the head greatly extended; more often it is flexed considerably upon the trunk. Many must have the head greatly elevated; others can only sleep with the head very low. Some observations made by Dr. G. Nosovitch (*Wratsch*) upon 235 soldiers showed that 37.5 per cent. slept upon the right side, twenty-three per cent. on the left, and 6.5 per cent. on the back.

It has yet to be determined whether any particular harm can come from sleeping in a certain position which the individual unconsciously assumes. A popular belief exists to the effect that the liver, being a heavy organ, tends to press upon the other abdominal viscera when a person lies on the left side. At any rate, more persons, probably, sleep on the right side than on the left, as experience and Nosovitch's statistics show. The author in question believes, also, that the posture in sleep influences the extension of a bronchitis. He found, for example, that in the 235 cases referred to, all of whom had this disorder, in 97 it was left-sided, in 72 right-sided, and in 66 on both sides. He thinks that the preponderance of the bronchitis on the left side was due to the fact that there was a greater expansion of this side during sleep, and, consequently, a greater ingress of cold air or of the morbific particles causing the disease.

Some writers have thought that the position in sleeping has an influence upon the passage of fæces through the colon, the position on the right side being especially unfavorable to emptying the colon. Repose on the left side, on the other hand, favors the gravitation of fæces from the transverse into the descending colon, and is therefore to be preferred by those suffering from habitual constipation (J. S. Jewell).

A recent writer has argued strongly for the view that the head should be lower than the feet during sleep, and he claims that more perfect health and greater longevity will result from such approximate topsy-turviness. The contrary position, with the head and trunk considerably raised, sometimes relievescra mps in the legs. It is well known that some chronic nervous affections, more particularly nocturnal epilepsy and some forms of insomnia, are sometimes benefited by sleeping in a partially erect posture.

It appears, therefore, that the posture during sleep is a matter deserving of some attention from physicians, and that some actual therapeutic results may be obtained by looking after its details.

A GERMAN WAY OF DEALING WITH THE QUESTION OF THE EXCESSIVE SUPPLY OF DOCTORS.

THERE has been a steady increase in the number of medical students and medical graduates at the German universities during the past few years. In the nine Prussian universities, for example, there were 3,538 medical students during the semester of 1885–86, while this year the number has increased to 3,682.

The increase in the number of physicians in Germany has evidently not been attended with corresponding benefit to the body medical as a whole. At least, this must be the conclusion drawn from the fact that at the recent annual meeting of the German Physicians' Association, a society organized in the social and economic interests of the physician himself rather than his science, an address was issued advising young men against entering the medical profession, "as the prospects of doctors are becoming worse yearly."

Although overcrowding has been one of the most patent and potent evils in the profession of this country, our own American Medical Association has never made any efforts worthy of the name to mend the matter. The plain and persistent presentation of the facts in the case by THE MEDICAL RECORD and other journals independent of collegiate interests, has accomplished something, and will, we believe, do still more. We do not, in fact, recommend the German way of formally announcing to the public that our ranks are already full enough for comfort. It smacks too much of the tradesman's attempts to limit competition. It is a fact of some importance to us, however, to learn that the prospects of the physicians in Germany are yearly becoming worse. For, doubtless, if true, this means that we shall yearly have a larger instalment of the pure-bred German physicians sent over to us. As our colleges only turn out from four thousand to six thousand new doctors every year, the prospect is, of course, most pleasant.

AFEBRILE PNEUMONIA.

OCCASIONALLY, in the aged, a croupous pneumonia, typical in every other respect, may be observed to run its entire course without any elevation of temperature. Such cases are rare, yet the possibility of their occurrence is well recognized by those who have a wide experience in the treatment of diseases in the aged, and, doubtless, they are more common than is generally supposed. The idea of a pneumonia running its course with no elevation of temperature is so contrary to ordinary experience that it may well happen that such cases often escape recognition.

It has long puzzled clinicians to account for this phenomenon, and it still awaits a perfectly satisfactory explanation. It has been shown that when uræmia is induced in animals there is a notable reduction in the body-temperature, and herein lies a possible explanation of the absence of pyrexia in these cases of senile pneumonia.

Dr. Giuseppi Lapponi relates a case, in *Il Raccoglitore Medico* of January 10, 1887, which would seem to sustain this theory. It concerned a woman, aged seventy-four, whose life had always been a hard one, and who had endured privations of many kinds, but had never suffered from any severe illness since her childhood. She was suddenly seized, while in apparently perfect health, with a chill, great oppression in breathing, and a dry and troublesome, though not very frequent, cough. The patient was greatly prostrated, had anorexia, thirst, and some dulness of the mental faculties. The temperature was 98.2 F., pulse 80, respirations 30. The physical signs pointed unmistakably to acute pneumonia in the left lower lobe posteriorly. Thermometric observations were repeatedly made throughout the course of the dis-

ease, but the temperature was never found to rise above the normal height. Examination of the urine gave evidences of a chronic nephritis. The tongue was very dry, there was complete anorexia, and the pupils were irregularly dilated, signs which the writer took to be indicative of a slight degree of uræmic poisoning, and it was to this cause that he attributed the entire absence of fever.

There may, of course, be, and doubtless are, other conditions which, occurring coincidently with pneumonia, would tend to prevent a rise of temperature such as normally takes place, but this observation would seem to show that one cause, at least, of apyrexia in acute diseases in the aged may be chronic nephritis giving rise to a mild degree of uræmia.

SPLENIC TISSUE AS A THERAPEUTIC AGENT.

Some curious experiments have recently been made by Dr. Predazzi with the pulp of the spleen, with a view of determining its value, if it has any, in the treatment of anæmia. A mixture was made containing brandy, one and one-half ounce; splenic pulp, four and one-half ounces, and emulsion of bitter almonds, ten and one-half ounces; the whole to be taken in the course of the day with the meals. Five patients with chlorosis were treated with this mixture, and in the course of from one to three weeks the following results were observed by the author (*Deutsche Medicinal-Zeitung*):

1. Rapid improvement in the general health, and increase in the number of the red blood-globules.

2. A speedy and permanent cure of the functional disturbances of the nervous system, digestive and urinary organs, and circulatory apparatus.

3. Increase of arterial tension and of the body weight.

The patients were, however, put at the same time upon a nourishing and regulated diet, and it is, therefore, somewhat difficult to say how much of the benefit was derived from the spleen pulp, and how much from the good food, to which the patients were doubtless not accustomed. We venture to suggest, however, that the latter was at least equally as potent for good as the chopped-up spleen.

MEDICAL LEGISLATION IN WISCONSIN.

The *Evening Wisconsin*, a Milwaukee paper, strenuously opposes the present bill to regulate the practice of medicine in its State. It says in effect that the proposed bill is revolutionary, and that Wisconsin is all right as it is, its death-rate being low and its doctors highly intelligent. The bill, which we have examined, is not so alarmingly radical as the *Wisconsin* seems to think, and that paper has certainly some misconceptions about it. A mixed Board of Examiners is provided for, who certify the diplomas of those having such documents, and who examine persons who do not have them. The Board is appointed by the Governor from nominees of the three State societies. This is objected to, because Wisconsin has 2,000 physicians, of whom only 400 are members of the State medical societies. All, however, can and should have such membership. The bill is, in general, much like other bills that have worked successfully in other States.

Perhaps the columns of profitable quack advertisements which we see in the *Evening Wisconsin* may bias our esteemed contemporary somewhat against the "too severe" regulation of medical practice. We observe that it announces the merits of two Milwaukee quacks who prey upon the sexual troubles of young men. Such gentlemen pay from $100 to $1,000 a month for advertising.

At any rate, while the bill the *Wisconsin* attacks may have some objectionable features, the general principle that a community should supply its citizens only with educated physicians is a good one and one that is constantly gaining ground.

SOME NEW REMEDIES.

The following are a few of the more recently introduced therapeutical remedies which have been recommended as of more or less efficacy in the treatment of a number of diseased conditions. Whether or not they will prove, on more extended trial, to be as valuable as their sponsors believe them to be, time and experience alone can show.

The carbolate or phenate of mercury has been recommended very highly by Dr. P. Gamberini in the treatment of syphilis. It is given in the form of pills, each containing one-third of a grain. At the commencement two pills are given a day, and the number is gradually increased to six. If given in larger dose, the salt is liable to cause some gastro-intestinal irritation and, occasionally, ptyalism. The author reports ten cases of syphilis treated with phenate of mercury, and states that he has records of many more in which similar results were obtained (*La Riforma Medica*). The time from the first exhibition of the salt until the disappearance of all syphilitic symptoms was, in six cases, from twelve to twenty days; in three, from twenty-five to forty-five; and in one case, seventy days. In doses of from two-thirds of a grain to one and a third grain in the twenty-four hours the drug was well borne by all, but when the dose was raised to two grains a few patients showed slight symptoms of intolerance. In one case even small doses caused intestinal colic, and in three cases a moderate degree of ptyalism was produced.

Tulipine is an alkaloid which has been extracted by Gérard from the common garden-tulip, *Tulipa gesneriana* (Linn). Its chemical and physiological properties have been compared to those of colchicine, veratrine, and scillitine (*Les Nouveaux Remèdes*). It unites with acids to form salts. A dose of one grain and a half is sufficient to cause death when administered to cats, the fatal result being due to paralysis of the heart. In medicinal doses of one-twelfth to one-tenth of a grain it increases the salivary secretion, is diuretic and laxative. Besides its effects upon the heart and intestinal tract, it acts also upon the central nervous system. All parts of the plant furnish the alkaloid in considerable proportions.

Methylol is an ether in which two atoms of hydrogen have been replaced by two of oxide of methyl (*Los Medicamentos Modernos*). It is a colorless fluid, soluble in water, alcohol, and the fixed and volatile oils, having an odor resembling chloroform and acetic ether, and an aromatic taste. When internally administered it is said to induce profound sleep, which is, however, not

of long duration, owing to the rapid elimination of the drug. It excites no irritation of the stomach, but, on the contrary, relieves nervous pains of this organ and of the intestines. Applied externally, in the form of an ointment or of a liniment, it is lauded as an excellent local anæsthetic analgesic. Its therapeutical indications would seem to be many, as it is said to be a perfect substitute for chloral in all cases in which the stomach is irritable and in which, for that reason, chloral is not well tolerated. On account of its prompt action and rapid elimination, methylol is of value as an hypnotic in the delirium accompanying acute febrile affections. The applications of the drug as an analgesic are very numerous, since it is indicated in all cases in which it is desired to diminish pain and reduce local hyperæsthesia. It may be given in doses of four minims every ten minutes, until the desired result has been obtained, or until four doses have been taken.

Catramine is another remedy which Dr. L. Casati, writing in the *Raccoglitore Medico* of March 10, 1887, characterizes as of great value. It is an oil obtained by Bertelli, by means of distillation, from the gum (*catrame*) of the *Pinus canadensis*. It is of a straw color, having a faint and rather pleasant odor of turpentine, is soluble in ether and alcohol, and slightly so in water. It has an agreeable balsamic taste, and is taken readily even by children. It is said to increase the appetite and to promote digestion. It is recommended very highly in the treatment of affections of the respiratory apparatus, catarrh, chronic pneumonia, incipient phthisis, etc. In other catarrhal conditions, as of the stomach, intestines, and especially of the bladder, its good effects are said by Casati to be most marked. In all affections, indeed, of the genito-urinary apparatus it is vaunted as being superior to copaiba or any of the commonly employed balsams. It is prepared by a special process, and would seem to be a proprietary article, and so, we fear, like many other preparations, it will never come into general use as a legitimate therapeutic agent, even though it may be as excellent a remedy as Dr. Casati and others seem, from their present experience, to think it to be.

THE INFLUENCE OF THE EMOTIONS IN THE ETIOLOGY OF SKIN DISEASES.

It has long been a question whether a cutaneous eruption may be caused by a purely mental process apart from any other apparent etiological factor, and not a little controversy has arisen from it. It is now, however, pretty generally conceded that such a cause is competent to produce, not only cutaneous lesions, but also morbid processes in other organs and parts of the body, and numerous cases of this nature are on record.

Dr. Tommasoli, in a recent memoir (*Revista Médica de Sevilla*), upholds the opinion that various cutaneous eruptions may follow upon, and be caused by, violent emotions, and cites several cases in support of this view. The first case was that of a young woman who was suddenly attacked with a pemphigoid eruption immediately after receiving the news of the death of her husband. In another instance a lady presented an eczema, covering the eyelids, neck, arms, and vulva, which made its appearance very suddenly after it had been announced to her that her daughter had committed suicide. A third case was that of a man who had been threatened with personal injury by a debtor whom he had importuned for payment. He was greatly frightened, and was almost instantly seized with an acute dermatitis accompanied with a pustular eruption covering the back and extremities.

These cases by themselves would hardly suffice to establish the truth of this causal relation between emotions and skin eruptions, but they are valuable in the way of cumulative evidence, taken in connection with the numerous other reported instances which tend to confirm this theory.

News of the Week.

ANOTHER STATE BOARD OF HEALTH.—Nebraska has established a State Board of Health. The new law provides that the Governor shall appoint seven persons, two from each Congressional District, and one at large, with the Governor as their presiding officer. Persons appointed must be graduated physicians, of at least ten years' consecutive practice, and the term of office is to be seven years.

MALIGNANT MEASLES IN KANSAS CITY.—Dr. John Fee, City Physician of Kansas City, has given notice to all physicians to report cases of measles. He reports more deaths from measles than from diphtheria and scarlet fever combined, and proposes to placard houses containing cases of the disease.—*Sanitary News.*

THE DEATH OF PROFESSOR HORNER, of Zurich, well known as an ophthalmologist, is announced.

A CURIOUS WAY TO ADVERTISE.—The local paper of a town in West Virginia announces that a Dr. C. B. Blubaugh, of Huntington, "has been highly honored by the Royal Society of England for important surgical operations." This sounds imposing, but it is nonsense all through, since the Royal Society in question has nothing to do with surgery, or medicine either, except as a part of general science.

WE ARE GLAD TO FIND that classical learning is not confined to Boston or Chicago. Dr. H. Plageman, of Hustisford, Wis., a town which should be better known than it is, sends us his translation of the Greek sentence written on the Boston doctor's slate (*vide* MEDICAL RECORD of March 5th). It is: "My relatives want me to come home." Hustisford should be represented in the International Congress.

A WESTERN VIEW OF IT.—The *Weekly Medical Review*, of St. Louis, says: "The consulting physicians in the case [of the late Mr. Beecher] with Dr. Searle were Dr. W. Todd Helmuth, of New York (formerly of St. Louis), a homœopath, and Dr. William E. Hammond, of the College of Physicians and Surgeons of New York. Little incidents like these 'show up' the 'true inwardness' of the 'new code' or 'no code' men in New York." The only mistakes here are that Dr. William A. Hammond was the man, not William E.; that he is not of the College of Physicians and Surgeons; and that he did not meet Dr. Helmuth in consultation at all. Little paragraphs like the above should be written with more care.

THE NORTH CAROLINA STATE MEDICAL SOCIETY will hold its next annual meeting at Charlotte, on April 13th, 14th, and 15th.

A GREAT MANY REVOLUTIONARY THINGS have been accomplished on paper and by resolution. Nothing has been proposed, however, much more radical than that of the Ohio Sanitary Association, which recently "*Resolved*, That it is the sense of the Ohio State Sanitary Association that syphilis should be made a legal bar to matrimony." Adopted unanimously.

HOW DR. OLIVER WENDELL HOLMES RELIEVED HIS ASTHMA.—In the first instalment of Dr. Holmes' entertaining article in the *Atlantic Monthly* for March, giving an account of his trip to Europe, the experiences of the writer in overcoming his attacks of asthma are related. All kinds of prescriptions were showered upon him, but Dr. Holmes announces that nothing did him so much good as a certain patent asthma-cure, made in Providence, R. I. The composition of this is said to be:

℞. Pulv. lobelia,
Pulv. stramoniæ fol.,
Pulv. potas. nitrat.,
Pulv. black tea.....ää ʒ ij.
M. and sift.

Some of this is burned and the smoke inhaled.

THE SOCIETY OF THE ALUMNI OF BELLEVUE HOSPITAL is the name of a new medical society organized in this city. As there is no institution, so far as we know, of the above name granting diplomas, we are at a loss to understand what the society in question is composed of. Bellevue Hospital is a public hospital belonging to New York City, and cannot possibly have any alumni in the ordinary sense of the word. Bellevue Hospital Medical College is a teaching institution, entirely separate, officially, from the hospital. We advise the young society to rechristen itself. Having secured nomenclatural lucidity, we will then wish it all possible success.

COCAINE NOW COSTS about a cent and a half a grain.

GEOGRAPHICAL REPRESENTATION AND THE AMERICAN MEDICAL ASSOCIATION.—The *Medical News* states that, upon examining the list of officers of Sections of the American Medical Association for the next annual meeting, it will be observed that of sixteen positions Illinois has four, Missouri three, Maryland two, and New York, Pennsylvania, New Jersey, Ohio, Kentucky, Arkansas, and Minnesota, each one. Two States—Illinois and Missouri—furnish nearly one-half of the appointees. The records of the meetings show that for three consecutive years they have or will have been held considerably west of the centre of our country's population. Even admitting the superiority of Western medicine, the above distribution of officers seems hardly democratic, or in harmony with the eagle-screams heard when the appointments of the International Congress were first announced.

CONDITIONS OF SUCCESSFUL PRODUCTION OF LOCAL ANÆSTHESIA IN TOOTH-EXTRACTION.—Dr. A. Lebrun, of Brussels, and his house-surgeon, M. Andries, have published the notes of twenty-nine cases in which they employed local cocaine-anæsthesia for the extraction of teeth. In twenty-three cases the anæthesia was complete, in one case partial. In the remaining five cases the procedure was unsuccessful. This is attributed by them to the difficulty of introducing the short, straight needle of the ordinary hypodermic syringe in the case of the second and third molars, and also, perhaps, to no precautions having been taken to prevent the escape of the liquid. They point out that M. Viau, of Paris, who succeeded in producing complete anæsthesia in every one of his eighty-six cases, made use of a specially constructed syringe, with a holder by which it could be grasped firmly between the index and middle fingers, and provided with needles of various degrees of curvature; also, that he surrounded the tooth with plugs of cotton-wool, and applied the finger over the puncture after the withdrawal of the needle. Besides which he made the patient keep rinsing his mouth with cold water during the five minutes that intervened between the introduction of the cocaine and the actual operation. These precautions were not observed by MM. Lebrun and Andries. They used, however, a solution similar to that of M. Viau—viz., fifty centigrammes (seven and a half minims) of a two per cent. solution of carbolic acid containing five centigrammes (three-fourths of a grain) of hydrochlorate of cocaine, half of which quantity was injected into each surface of the gum.—*Lancet.*

STUDIES FOR MEDICAL STUDENTS.—The Berlin Medical Faculty recommend for medical students the study of meteorology, mineralogy, geology, anthropology, psychology, and logic. This is a very poor selection, for American medical students at least. Anthropology, psychology, and logic are well enough; but for the rest, *belles lettres* and the humanities are better far than the 'ologies, since they teach human nature and the art of expression, things much needed in the very human work of dealing with the sick.

THE TENEMENT-HOUSE LAW recently enacted by the New York Legislature is a measure which will doubtless promote better health and more comfortable living among the laboring classes of our city. The measure was advocated and carried through largely by the *Morning Journal*, and that paper deserves credit for its success in practical philanthropy.

A DUEL TALKED OF.—We learn with pain that a personal altercation has occurred between Dr. Love and Dr. Todd, of St. Louis. Dr. Love, having editorially criticised Dr. Todd some time ago, was snubbed by the latter, who in turn was immediately struck by the former. These interchanges of opinion were then suspended temporarily, but a resumption of hostilities is talked of. Dr. Love is President of the Mississippi Valley Medical Association, and highly esteemed as a physician, besides being a stalwart advocate of the American Code of Ethics.

THE MYXŒDEMA COMMITTEE of the Clinical Society of London has completed its investigation of the etiology, symptoms, and morbid anatomy of this interesting disease, and it is now engaged in studying the question raised by Professor Kocher's observations of the effects of total extirpation of the thyroid gland. For this purpose Dr. Felix Semon has issued a letter to all surgeons who are known to have performed this operation, asking for a statement of the results observed.

Reports of Societies.

NEW YORK ACADEMY OF MEDICINE.

SECTION IN SURGERY.

Stated Meeting, March 14, 1887.

ROBERT F. WEIR, M.D., CHAIRMAN.

DR. C. H. WILKIN presented several patients who illustrated the results of (see p. 378)

SUTURED TENDONS.

THE CHAIRMAN said that he had practised suturing of tendons in several cases and with good results.

DR. BOLDT asked if, when the operation was performed some time after the receipt of the injury, it was necessary to freshen the ends before uniting them.

THE CHAIRMAN said that it had been found necessary to dissect upward farther, in order to secure the upper end of the tendon, than it had been when the operation was performed at an early date. In either operation, the primary or the secondary, the extent of the cut upward, in search of the upper end, could be lessened by making traction with a bandage from above downward.

DR. MOORE presented a patient with

A GLOBULAR PULSATING TUMOR IN THE REGION OF THE HEART.

There was no bruit. The heart was only slightly displaced. There was a distinct history of syphilis dating back six years. About one year ago she noticed that her left arm was enlarging and was bluish. Some time afterward she noticed that there was some trouble in the region of the heart, and about four months ago the tumor in the region of the heart was first seen. It was supposed that it was an aneurism of some portion of the aorta.

DR. JOHN A. WYETH then read a paper entitled

LAPAROTOMY AND INTESTINAL SUTURE—EXSECTION OF A PORTION OF THE ILEUM WITH RESTORATION OF FUNCTION OF THE ALIMENTARY CANAL.

Leah R——, Russian, fifty-six years of age, housewife, was admitted to Mount Sinai Hospital October 9, 1886, with a swelling as large as an ordinary fist occupying the inner aspect of the left groin and thigh.

The skin over the tumor was red, tender, and doughy, and fluctuation was evident. The surrounding tissues were slightly emphysematous. She had been in her present condition ten days in a tenement house. Her temperature was normal.

Diagnosis: Strangulated femoral hernia. Ether was administered, and the tumor was incised, when several ounces of foul pus mixed with intestinal matter were discharged; the mass was gangrenous, and an opening into the intestine was detected. This opening was dilated with a pair of dressing forceps to secure a free exit of intestinal contents, and a loose dressing of iodoform gauze was laid over the wound. Only a small quantity of matter escaped when the gauze was changed every second or third day.

Thirteen days after the first operation ether was administered, laparotomy performed, two inches and a half of the intestine with a triangular piece of the mesentery removed, and the edges of the wounds united by sutures. The edges of the divided mesentery were united first, and by eight interrupted catgut sutures, about one fourth of an inch distant from each other.

The mesenteric attachments of the ends of the cut intestine were brought carefully into apposition and secured by three kinds of sutures: (1) A suture through the mucous membrane alone, or Czerny's suture; (2) a suture through the peritoneal coat alone, or Lembert's suture; (3) a suture which pierced the peritoneal coat, and, passing along with the muscular layer, came out upon the free border of the divided gut, the intermediate suture.

In suturing the intestine, the very finest black (iron-dyed) silk and a delicate, perfectly straight round needle were used. The silk was made aseptic in sublimate solution (one to three thousand), and it and the needle taken from a one to twenty carbolic acid solution as they were used.

The cavity of the gangrenous abscess was scraped out with a Volkmann's spoon and rendered thoroughly antiseptic, the opening into the intestine plugged, and the whole cavity packed with iodoform gauze before the laparotomy was commenced. Also when the loop of intestine, five inches above and below the occlusion, had been drawn out of the abdomen, a piece of cotton tape one-fourth of an inch wide was tied four inches above and below the limits of the gangrenous opening, so as to completely occlude the lumen of the gut.

The operated lasted four hours. Recovery took place without unfavorable spmptoms. There is no sign of obstruction or interference with the functions of the alimentary canal, and the hernia, at this date, is radically cured.

With reference to the treatment of

STRANGULATED HERNIA WITH GANGRENE OF THE INTESTINE,

Dr. Wyeth said that establishing a permanent fecal fistula at the seat of the gangrene should be consigned to subjects so feeble that no operative procedure was justifiable.

Whether or not the gangrenous portion should be immediately exsected, the ends of the gut reunited by suture, and the loop returned to the abdominal cavity, must be determined by the condition of the patient at the time of the operation. In most cases, however, the condition of the patient is not favorable for immediate exsection. In such cases the plan carried out in the case just described should be followed.

The difficulties of the operation, however, are great, and the time required dangerously long, unless the surgeon has had sufficient practice to enable him to work rapidly and safely.

DR. ROBERT ABBE thought there was a possibility that the brilliant result obtained by Dr. Wyeth might lead some to adopt the method of treatment described in cases in which recovery would take place spontaneously; for fecal fistula following gangrene in femoral hernia was quite frequently healed by nature. Again, the use of Dupuytren's enterotome was much less dangerous than laparotomy. Besides, a laparotomy that required four hours for its performance endangered the life of the patient very much on account of the liability to the occurrence of acute nephritis after prolonged etherization. On this account he thought that, in such cases, an operation should be delayed for a longer period than three weeks, say, to two or three months, before attempting to close the intestinal fistula. He then related a case which he treated with Dupuytren's enterotome.

THE CHAIRMAN had not yet met with a case of gangrenous femoral hernia with fistula following but what had healed eventually without operation, and therefore he recognized the justice of Dr. Abbe's criticism, while at the same time he appreciated the advantage mentioned by Dr. Wyeth of not performing resection at once; for, the inflamed condition of the intestine, extending beyond the parts immediately involved, rendered the union much more insecure than that obtained by operating some time afterward. Besides, the general condition of the patient forbade, as a rule, a prolonged operation.

TO MAKE AN ARTIFICAL ANUS WAS MUCH SAFER,

and subsequently it could be determined what surgical procedure, if any, was best adapted to the case. The mortality of resection done for artificial anus was much less than when it was performed for hernia, it being only thirty-eight per cent. The fact of the surgeon's inability to feel certain that he could unite the intestine so that it would be free from leakage was one that was entitled to the highest consideration.

Dr. Robert T. Morris suggested a flap operation that would allow both sides of the intestine to be supplied with blood from the mesentery, and, at the same time, prevent the peristaltic action from making traction upon one point, and this, also, he thought would diminish the liability to the occurrence of stricture. He asked Dr. Wyeth if he thought that he would require four hours to perform the operation in another case.

Dr. Wyeth said that it was very difficult to say what length of time would be consumed by any operation; but, under circumstances throughout identical with those under which the operation in this case was performed, it was quite probable that the time would be considerably shortened. He thought that the dangers arising from peristalsis need not be very much considered. One objection to the flap operation would be an unnecessary prolongation of the operation, as it would certainly be more difficult to unite the edges than those of a simple straight cut.

As to the suggestion that the case might have yielded to Dupuytren's enterotome, Dr. Wyeth had not had one in which he had tried it, although he regarded it as a good and conservative operation. But he doubted whether the results in the cases in which Dupuytren's operation had been performed would encourage its repetition, if there was another which was comparatively safe. The question of leakage certainly was an important one, but its importance, he believed, would be reduced by the more careful surgery of the future.

The section then adjourned.

Correspondence.

OUR LONDON LETTER.

(From our Special Correspondent.)

THE COLD-BATH TREATMENT OF HYPERPYREXIA—EPILEPSY AFTER GUNSHOT WOUNDS CURED BY STRETCHING THE SCIATIC NERVE—HÆMATURIA IN CASES OF GRANULAR KIDNEY—CÆSAREAN SECTION FOR UTERINE FIBROMYOMA—THE STATUS OF ARMY MEDICAL OFFICERS—UNIFORM VS. PRIVATE CLOTHES.

London, March 5, 1887.

At the last meeting of the Clinical Society, Dr. Carrington, Assistant Physician to Guy's Hospital, brought forward a case in which he had successfully employed the cold bath in treating the hyperpyrexia of acute rheumatism. As Dr. Carrington very truly remarked, there is still among patients and their friends (and also, I might add, among practitioners) considerable prejudice against this remeny, even in desperate cases. Dr. Carrington's patient was a medical student, aged twenty-three, who had so far recovered from a mild attack of acute rheumatism (under salicylic acid treatment) that he had left his bed. On taking his temperature one day at noon it was found to be 107°, but soon afterward fell to 106°. Dr. Carrington then saw him and thought it desirable that he should be removed to a private ward in Guy's Hospital. During the journey thither he became delirious, and on arriving at the hospital was livid and unconscious with a temperature of 109.8°. He was at once placed in a bath of water at a temperature of 70° F. By adding pieces of ice, the water was cooled down as rapidly as possible, but the heat of the body was so great that, although considerable quantities of ice were used, great difficulty was experienced in cooling the water. Pouring ice-cold water on the head, however, produced some effect. Fifteen grains of antipyrin were also administered per rectum. The patient was kept in the bath for an hour, by which time the rectal temperature had fallen to 102.4°. He was then taken out and covered with a sheet. Tetanic convulsions then came on, but gradually ceased, and by 7 P.M. his temperature had fallen to 97.2°. In another hour consciousness returned, and he was able to take nourishment (milk). During the next day he remained comfortable, and salicylate of soda was given. By midnight, however, his temperature had risen to 103.8°. Fifteen grains of antipyrin were given, but failed to reduce the temperature, and as by 2 A.M. this had reached 105.2°, the ice-bath was given again for fifteen minutes. As the temperature had then fallen to 101°, he was removed, but again replaced in the bath at 6 A.M., as the thermometer indicated a temperature of 105.4°. A quarter of an hour's immersion again acted efficaciously, and sleep followed. At 2 P.M. a third bath (of forty minutes' duration) was given, as the temperature had again reached 105°. After this no further hyperpyrexia occurred. The temperature was, indeed, normal, except on one occasion when, with a return of pain, it reached 101°. Salicine was substituted for the salicylate of soda, and the patient made a good recovery.

A short discussion ensued on the reading of Dr. Carrington's paper. Dr. Hale White commented on the failure of both antipyrin and the salicylate of soda to reduce the temperature, and suggested that we might, in time, discover that each drug was applicable to a particular class of cases. The President (Dr. Broadbent) said he had never seen convulsions occur during the rise of temperature. He had seen them come on during the cold bath in a case which ultimately terminated fatally, and had seen hyperpyrexia supervene during the use of salicylate of sodium. Dr. Stephen Mackenzie said he had had several cases of hyperpyrexia in private practice. All had terminated fatally. Convulsions, when present, were tonic.

Dr. Hadden brought forward the case of a man in whom epileptic fits had followed a gunshot-wound of the calf. The fits first came on four months after the injury, by which time the original wound had quite healed. The sciatic nerve was exposed and stretched. After this the attacks ceased, but the patient suffered from severe paroxysmal pain in the calf, followed by the same sensations as if a fit were coming on. Dr. Hadden referred to the experiments of Brown-Séquard and Horsley, who had induced epilepsy in guinea-pigs by injuring the sciatic nerve. Mr. Anthony Bowlby related a case in which epileptic fits followed a gunshot-wound of the leg, but were cured by stretching the sciatic nerve. Mr. Bowlby then read a paper containing the particulars of three cases of granular kidney in which hæmaturia occurred. He observed that these cases were of importanee in connection with diagnosis. In one of the cases the hemorrhage was so free that it was thought to proceed from the bladder. In others, the diagnosis had to be made from other of the more recognized causes of renal hemorrhage, especially calculus. Dr. Carrington remarked on the rarity of these cases. Dr. Maguire thought hemorrhage, in cases of granular kidney, was not so rare as stated. Patients sometimes seemed better after slight hemorrhages. Dr. Broadbent said severe hemorrhages were undoubtedly rare. He had, however, seen one case where the patient bled to death in spite of treatment.

At this week's meeting of the Obstetrical Society, Dr. Horrocks, Assistant Obstetric Physician to Guy's Hospital, described a case of obstructed labor and exhibited the uterus removed after death, with the fibro-myoma which had prevented delivery *per vias naturales*. Labor had come on at term, and the waters had come away. Pains continued for five weeks, but without effecting delivery. Meanwhile disintegration of the fœtal skull had occurred and portions came away. The patient being seen in this stage, Cæsarean section was performed, but the patient died almost immediately. The fœtus removed was putrid.

The recent Army Warrant abolishing "relative rank" among army medical officers has caused some consternation, not unmixed with bewilderment, in military medical circles. Questions have been asked on the matter in the House of Commons, and a few days since the Sec-

retary of State for War replied that "the abolition of the term 'relative rank' has not altered the position of medical officers in any respect whatever." This has reassured some. On the other hand, many of those concerned argue that even if it be only a paper dignity, the taking of it away must make some difference. For years the tendency has been to treat the medical officers worse than those of any other non-combatant department. They, therefore, naturally wish to retain what little position they have. One gentleman has sarcastically written to the journals to suggest that, as in future medical officers are to have no recognized status in the army, they might as well be relieved from the expense and encumbrance of wearing uniform. The latter, indeed, is by no means a source of pride to those who don it, and medical officers of high rank take the advantage of their position to appear as much as possible in civil dress. In this they but imitate the combatant officers, who, as soon as they are off duty, hasten to resume the garb of civil life. The wearing of uniform, indeed, is felt by them to be not a privilege but a burden, only to be endured when on duty, on certain public occasions, and perchance at a ball. When the officers act thus it is no wonder that the men should feel similarly. They are, indeed, obliged to wear uniform always, but can obtain *special permission* to wear private clothes when on their annual furlough. This contempt of military uniform is, to some extent, shared by the public, and a private soldier inspires much less awe than a policeman. It is different abroad, and when Lord Wolseley accompanied the Prince of Wales through Germany wearing private clothes, those who saw him in public could with difficulty believe him to be our celebrated general. It has been more than once mooted that doctors should, like clergyman, dress in a particular way, so that they may be recognized everywhere. The proposal, however, has not been favorably received. Clerical garb, though, commands respect everywhere, and even the hideous wigs worn in court by legal luminaries fail to excite derision. Why, then, should we not revert to the gold-headed cane?

OUR PARIS LETTER.

(From our Special Correspondent.)

THE SUPPOSED ANTAGONISM OF OPIUM AND BELLADONNA—THE SIGNIFICANCE OF THE HERPETIC ERUPTION IN TYPHOID FEVER—DRINKING-WATER AND DISEASE-GERMS.

PARIS, March 18, 1887.

THE notion that opium and belladonna are physiologically and therapeutically antagonistic is still entertained by many in the profession. The following note, however, recently communicated to the Paris Academy of Medicine by Professor Villemin, of Val-de-Grâce, would seem to invalidate this theory. A young artilleryman, of a strong constitution, had been affected one or two months when he was admitted to the hospital with acute diabetes with all its symptomatology, with a polyuria of fourteen and a half litres in the twenty-four hours, and a glycosuria of five hundred and forty-one grammes per day. The patient was immediately submitted to the usual classical treatment of diabetic patients (gluten bread, meat, abstinence from sugar and from farinaceous substances, alkalis, etc.), but at the end of the week there being no improvement whatever, and as the state of the patient was extremely grave, and having remembered that he had formerly cured a patient affected with diabetes insipidus with opium and belladonna combined, Dr. Villeman resolved to try this medication in the present case. He commenced by administering ten centigrammes of the extract of belladonna, and five centigrammes of the extract of opium per day. In seven days the quantity of urine descended to ten litres, and the sugar was reduced to four hundred grammes. The dose of the extracts was progressively increased, till at the end of two months the patient took fifteen centigrammes of each extract per day, and the doctor had the satisfaction of seeing that the quantity of urine and the proportion of sugar had diminished gradually. At that time the urine was three to four litres and the sugar two to five grammes per litre, and the dose of the opium and belladonna was raised to twenty centigrammes, and at the end of eight days there was no more any trace of sugar. During seventeen days the medication was continued without any reappearance of glucose. The medication was then suddenly stopped, and in the space of two or three days the sugar returned to sixteen grammes. At the end of three days more the use of the narcotics was resumed in doses of twenty centigrammes each. Five days later the sugar had again disappeared, and the quantity of urine passed was two litres per day. The cure was maintained during the time that the patient took the medicine, but as soon as it was stopped, or the doses of the opium and belladonna were diminished, the sugar reappeared and the urine augmented. During the whole period of experimentation the patient was restricted to the diet of diabetics, but after that he was allowed the diet of the other ordinary patients. This change did not produce any modification. The glucose continued to be absent so long as the opium and belladonna were maintained in doses of twenty centigrammes. By way of experiment, the bromide of potassium was administered for fifteen days, during which time the narcotics were suppressed; the sugar reappeared and mounted up to forty-five grammes, and the urine to eleven and a half litres. On the other hand, the doctor wished to know whether, of these two extracts, one of them had a preponderating or exclusive action in the modification of the malady, and he established that the results obtained were due to their association. The patient referred to above, after having been submitted for a month to the treatment described, left the hospital cured.

In an article in the *Revue Médicale de l'Est*,[1] Dr. Spillmann draws attention to the fact that it was for a long time maintained that herpes labialis of fevers never occurred in typhoid fever. Some authors have gone so far as to say that even when all the symptoms characteristic of typhoid fever exist, the diagnosis of typhoid fever must be abandoned, if the eruption referred to should spontaneously develop itself. Professor Hagen, of Leipzig, indicated febrile herpes among the negative pathognomonic symptoms; its presence, he stated, should always exclude the idea of abdominal typhus. Professor Hardy, of the Faculty of Paris, considered also the presence of herpes at the commencement of a febrile malady as being sufficient to remove all idea of typhoid fever. Hebra, on the contrary, maintained with other physicians of Vienna, that herpes may sometimes supervene in typhoid fever. This opinion has been confirmed by Spillmann, who in the space of a month observed the herpetic eruption in three cases among twenty patients affected with typhoid fever, and he had reason to believe that it was not a simple coincidence. Dr. Spillmann therefore concludes that febrile herpes may supervene at the commencement or in the course of typhoid fever, and that one should not consider, *à priori*, as not typhoid fever any febrile malady at the onset of which there appear vesicles of febrile herpes.

The French are beginning to be alive to the importance of attending to the purity of their drinking-water, as it has been proved that water is frequently the vehicle of the production and propagation of the germs of infectious maladies, principally of cholera, dysentery, and typhoid fever. In confirmation of this theory, Dr. Brouardel, in his report to the Paris Academy of Medicine on an epidemic of typhoid fever which occurred a short time ago at Pierrefonds, a few miles from Paris, says the cause of

[1] On the Diagnostic Value of Herpes in Typhoid Fever.

it was traced to the potable water of wells in the vicinity of cesspools, the contents of which were permanently mixed up with that water. In three houses contiguous to each other there lived twenty-three Parisians who went thither for the summer. Of this number twenty were affected with typhoid fever. Four belonging to one family (three young girls of fifteen, twenty, and twenty-three years of age, with their servant of twenty) succumbed to the disease. Of three persons of a family who were affected but escaped the disease, one had passed but twenty-four hours at Pierrefonds, the other two, having remarked a peculiar taste in the drinking-water, which they partook of only one day, resorted to the use of mineral waters instead.

As anticipated in my last, Professor Brouardel has been appointed Dean of the Faculty of Medicine of Paris in the room of Professor Béclard, recently deceased.

THE TREATMENT OF COLD ABSCESSES BY IODOFORM INJECTIONS.

To the Editor of The Medical Record.

Sir: Referring to your editorial on "The Cure of Cold Abscesses by Iodoform Injections" in The Record of March 12th, allow me to make, through the columns of your valued journal, the following statements concerning the method as practised at Professor Billroth's clinic.

Billroth uses a ten per cent. emulsion or mixture of iodoform in glycerine, and of this he injects forty to fifty grammes, equal to four or five grammes of iodoform, for each injection.

The abscess is tapped with a medium-sized trocar, the pus allowed to escape, but not washed out, the iodoform mixture injected through the same cannula, and a strip of adhesive plaster applied over the point of puncture.

Contrary to what is said to be the case when solutions of iodoform in ether are used, these injections cause absolutely no pain, except what is produced by the puncture, and the danger of distention through volatilization of ether, mentioned in your editorial, is excluded.

The injections should not be repeated as long as iodoform is excreted with the urine, which will sometimes be a number of weeks, or even months. I observed a patient at Billroth's clinic whose urine contained iodoform from an injection made over two months previously. The swelling was steadily diminishing. Months must often be allowed to show the full beneficial effects of an injection. Sometimes two or more injections are necessary to produce the desired result, but in general the final effects have been very satisfactory at Billroth's clinic.

The advantages of this method often become especially apparent in cases where the cold abscess is seated at some distance from the original disease, or where the real seat of disease cannot be attacked, *e.g.*, in abscesses from Pott's disease pointing in the inguinal or gluteal regions, or thigh, and causing large, purulent cavities in these localities, while in just such cases the treatment by incision is often not too satisfactory.

As the results obtained by this iodoform and glycerine mixture appear to be quite satisfactory, there would seem to be no necessity for subjecting patients to the pain produced by the injections of the solutions in ether; and the one great objection to the use of iodoform injections mentioned in your editorial, viz., their great painfulness, can no longer be urged against their general adoption.

I do not find the method mentioned in the last (1885) edition of "Billroth's General Surgery." My statements are according to personal observations.

H. Reineking, M.D.

Franklin, Wis., March 14, 1887.

Instantaneous Remedy for Lumbago.—Collodion, tincture of iodine, liquid ammonia, equal parts. To be applied widely over the parts with a camel's-hair brush. This applies to accidental or *a frigore* lumbago or to rheumatic pain produced by a strain or muscular exertion.

Army and Navy News.

Official List of Changes in the Stations and Duties of Officers serving in the Medical Department, United States Army, from March 20 to March 26, 1887.

Edie, Guy L., First Lieutenant and Assistant Surgeon. Leave of absence extended three months. S. O. 67, A. G. O., March 23, 1887.

Reynolds, Frank, Captain and Assistant Surgeon (retired). Died March 4, 1887, at Oakland, Cal.

Official List of Changes in the Medical Corps of the United States Navy for the week ending March 26, 1887.

Cordeiro, F. J. B., Assistant Surgeon, detached from the Navy Yard, Boston, and placed on waiting orders.

Medical Items.

Contagious Diseases—Weekly Statement.—Report of cases and deaths from contagious diseases reported to the Sanitary Bureau, Health Department, for the week ending March 26, 1887:

	Cases.	Deaths.
Typhus fever	0	0
Typhoid fever	10	4
Scarlet fever	54	8
Cerebro-spinal meningitis	6	6
Measles	134	15
Diphtheria	75	36
Small-pox	4	3
Yellow fever	0	0

The Causes of Wars.—A well-known French statistician has analyzed these, and arrives at the following conclusions anent them: He limits his inquiries to the last four centuries, and examines 286 wars in all. Of these, 55 were civil wars; 44 were wars of conquest and land robbery; 41 were wars of succession, or of crown claims; 30 were, as M. Leroy-Beaulieu puts it, wars under pretence of helping allies; 28 were professedly religious wars, but most of these were waged on an old monarchical principle, *Cujus regio, illius religio;* 24 were wars of retaliation; 22 were wars for taxes; 22 were wars of commercial rivalry; 8 were wars on so-called points of honor or prerogative. Among the wickedly capricious causes of the wars of the French monarchs of the seventeenth and eighteenth centuries we find such entries as "A war for a window," and "A war for a glove."

Perils of Rural Practice.—A French rural practitioner, Dr. Pierre Seguin, driving home one evening lately, was thrown out of the carriage and killed instantaneously by the shying of his horse. In the address of condolence drawn up by the Association of Medical Practitioners in the Gironde, attention is called to the dangers to which country doctors are exposed, just as sailors who have to brave the perils of the ocean.

The Position of and Indications for Total and Partial Laryngectomy were very well presented in some remarks made recently by Mr. Lennox Brown (*British Medical Journal*): When, eight years ago, the late Dr. Foulis, of Glasgow, showed at the Medical Society the patient from whom he had successfully extirpated the whole larynx four months previously, for "papilloma and spindle-celled sarcoma," I ventured to express a doubt whether that operation would ever yield beneficial results commensurable with the immediate danger of its performance, the very short extension of life, and the discomfort of an artificial larynx to those

who survived long enough to wear one; and I drew attention to the superiority of the statistics of tracheotomy to those of the radical operation. Dr. Foulis' was the eighteenth complete extirpation, and the second which survived more than nine months, for his patient lived a year and a half, and death ultimately resulted from phthisis. Since that time complete extirpation has been frequently performed, and there are now fully one hundred recorded cases. The results, however, have not improved, and the operation has been abandoned by many who formerly performed and advocated it. The operation of partial laryngectomy stands so far on a much more favorable footing, and the brilliant results of Eugene Hahn and other German surgeons have established it as one of far less immediate fatality than complete extirpation, and affording average periods of immunity from recurrence even of the more serious forms of malignant disease, which promise to be almost, if not quite, equal to those provided by tracheotomy. The success of Hahn's operation recently performed in London on an English patient has naturally attracted much attention. Mr. Butlin very shortly afterward had a similar operation; and he was the first English surgeon to adopt the procedure; the result of his case was quite successful so far as immediate recovery was concerned. Recurrence must, in the nature of things, be always anticipated; and we have yet to see what sort of history our cases will have in this respect. It is earnestly to be hoped that care will be taken in the selection of subjects for this operation, as otherwise discouragement will be given to its performance where other circumstances would be favorable. It is indicated in unilateral and intra-laryngeal epithelioma, and in recent non-infiltrating sarcoma. It is useless in pharyngo-laryngeal epithelioma, in which the larynx is invaded from the pharynx, and whenever there is implication of the cervical glands and structures adjoining the larynx. It is always possible, if on division of the thyroid cartilage the disease is seen to have extended beyond the limits suspected by prior examination, for the surgeon to desist from removal and to be content with having performed tracheotomy.

Carbolic Acid in Typhoid Fever.—Professor Barlow still continuus to advocate the use of carbolic acid in typhoid fever. He states that no form of treatment has, in his hands, been so successful. It modifies the disturbances of the intestinal tube, reduces temperature, and promotes quiet. Two drops of a solution consisting of equal parts of carbolic acid and Lugol's solution, may be given every three hours.

For Erysipelas.—Professor Da Costa continues to strongly advocate and recommend the use of pilocarpine in robust plethoric subjects. It is of striking value, and better results can be obtained than from any other mode of treatment. The proper dose is gr. $\frac{1}{8}$ to $\frac{1}{4}$ of pilocarpine, or ℥ xx. of fluid extract of pilocarpus. Local means are not of much avail.

The Cold Affusion in Headache.—Sir Robert Christison, in his "Autobiography," bears emphatic witness to the efficacy of this treatment, citing in particular the case of his own mother, who suffered from headache of a peculiarly persistent character, and who cured herself effectually by the cold douche. It was the favorite remedy of the Romans, as may be inferred from more than one passage in the judicious compilation of Celsus: "Capiti nihil æque prodest atque aqua frigida" (Nothing is so beneficial to the head as cold water), Lib. i., c. 3. Again (Lib. i., c. 5), when touching on the various inflammatory affections of the head and its cavities, he says: "Usus aquæ frigidæ prodest iis etiam quos assidue cupitudines gravedo, destillationes, tonsillaque male habent" (The cold affusion is of benefit to those also who suffer from chronic ophthalmia, from cold in the head, from catarrh, and from inflamed tonsils). Again, the lassitude and headache induced by the scirocco (*auster*), to which the British resident on the Mediterranean is so subject, and which no amount of acclimatization seems to lessen, has its appropriate remedy in cold water: "Præcipue omnibus eo auxilis utendum est ubi gravius cœlum austri reddiderunt" (This remedy is of especial advantage to all when the atmosphere has become heavy by the scirocco), Lib. i., c. 5.

Indications for the Use of Nitro-glycerine.—Dr. Trussewitsch, in an instructive paper on the use of nitro-glycerine, published in the *St. Petersburger Medicinische Wochenschrift*, points out that the value of this drug in various affections—angina pectoris, migraine, and neuralgia (which he describes as angioneuroses), as also in sea-sickness, some forms of anæmia, faintness, palpitation, and other diseases—depends upon the existence of an irregular distribution of blood, which condition may be inferred from a certain degree of pallor of the skin, especially of the face, often coexistent with a weak pulse and a small, rigid radial artery, which frequently is situated at some depth. When, on the other hand, headache and neuralgia occur in patients with chronic congestion of the subcutaneous veins of the face, nitro-glycerine is to be avoided; and similarly it is of no use in asthma, when the face is reddened in consequence of emphysema. If, however, a pale face exists with angina pectoris, migraine, giddiness, shock, toothache, or sea-sickness, the best results may be looked for by giving nitro-glycerine. The regulating effect of the drug exercises an influence over the congestion of internal organs similar to that brought about by bloodletting; and in these congestions, whether of lung, brain, or kidney, when they are of a temporary character, the pulse is generally found to be slow and of low tension—a fact which, as the author remarks, is sufficiently well known in reference to the fever-free periods of acute hyperæmia of the lung and kidney. Dr. Trussewitsch lays down as a rule that the condition of the pulse is the best indication for the employment of nitro-glycerine, and the most trustworthy guide as to the dose with which to commence the treatment. The smaller the radial artery is, the more rapidly it dilates under the action of the drug, and the less the secondary effects proceed; on the other hand, the fuller the pulse with a distended radial artery, the less it is affected; and finally, the softer the artery, with a weak pulse, the greater the secondary, and the less the general, effects. Single-drop doses of the one per cent. solution are sufficient in cases of small pulse, but with a full pulse it will be found that the full effects cannot be produced with less than two-drop doses. When there is a soft artery with a weak pulse, subnormal doses only should be given—a quarter to half a drop. After the trial dose is given, the patient's sensations of pulsation and pain in the head, as well as the distention of the radial artery under the finger of the physician, will be the guides for increasing the dose. The author finds that the best modes of administering nitro-glycerine are the simple dropping of the solution on the tongue, and by means of tablets; much less satisfactory results were obtained when given mixed with water.—*Lancet.*

Bright's Disease without Albuminuria.—At a recent meeting of the Société Médicale des Hôpitaux, M. Dieulafoy, who has already drawn attention to a form of Bright's disease in which there is no albuminuria, communicated the details of a case which had been verified by post-mortem examination. The patient was a man of sixty-three, suffering from headache and dyspnœa. Neither alcoholism nor syphilis were detected. Dyspnœa dated from several months back, and was characterized by attacks of oppression of a character differing from those which occur in asthma and emphysema. There was slight transient œdema below the malleoli; no albumen in the urine. Soon after admission, the patient was attacked with violent delirium and fever. Albumen was then discovered in the urine, and death took place on the eleventh day. The two kidneys presented characteristic lesions.—*British Medical Journal.*

NEPHRECTOMY FOR SCROFULOUS DISEASE.—A successful case of removal of the kidney for scrofulous disease was brought before the Glasgow Medico-Chirurgical Society by Dr. Clark, one of the surgeons of the Royal Infirmary. The patient, a married woman of twenty-six, had gradually developed the signs of abscess in the left loin, and as the urine contained pus and epithelial débris, this was diagnosed as being a renal abscess. The kidney was incised in January, 1886, and about a pint of pus evacuated, but the sinus continuing to discharge and other abscesses forming in the kidney, extirpation of the organ was decided upon. This was done in August last, by the lumbar incision, without any difficulty, the only incident worthy of note being the slipping of the ligature at the time of separation of the kidney from its pedicle. The patient made rapid recovery, and is now in perfect health, with a normal excretion of urine. Dr. Clark specially dwelt on the importance of the evidence obtained by the use of the ureteral catheter, as showing the other kidney to be sound, and showed that in the female the introduction of a catheter into the ureter was safe, easy, and satisfactory. He referred to the statistics of extirpation for scrofulous disease, and objected to the conclusion of Gross that the ventral was safer than the lumbar incision in such cases.—*The Medical Press*, January 26, 1887.

URTICARIA.—Lassar cuts short the duration and reduces the frequency of violent attacks of urticaria by twenty-four-grain doses of salicylate of sodium, repeated every two hours until three doses are taken. It is certainly well worthy of a trial, as the trouble is undoubtedly at times a very stubborn, not to say serious one

COD-LIVER OIL IN THE NERVOUS AFFECTIONS OF CHILDREN.—Dr. Frederic F. Andrews (*The Practitioner*, December, 1886) urges the use of cod-liver oil in the various nervous affections of childhood. He says that if we take a general view of the diseases which belong to this early period of life, this period of growth and development, we shall be struck by the one special character—they are all more or less convulsive, either as general convulsions, the commonly recognized convulsion-fit of infants, or the convulsive inspiration of laryngismus stridulus, or the dyspnœa of what has been called "rickets of the chest," or later on of chorea and epilepsy. All these have probably their origin in the great function of its young life; it is struggling, striving with all its might, to grow, all its energies are concentrated on this one necessity, and it is often carrying on the battle under adverse influences. He offers the following propositions: 1. In the process of the growth of new tissues there is a great expenditure of nerve-power, and also a disappearance of heat, which assumes some form of potential energy. 2. The exhaustion consequent upon this expenditure first shows itself at the age of three or four months (before dentition) in a nervous headache which is apt to be mistaken for the first stage of meningitis; later on, if dentition is going on easily and rapidly, that is to say, if the gums are full instead of showing one tooth at a time, we may have laryngismus stridulus; still later, what is called "rickets of the chest," but which is probably a nervous asthma from exhaustion of the pneumogastric and respiratory tract, supervenes; and subsequently, when the growth of the limbs takes place, the great strain is on the spinal nerves, and the child is liable to chorea. 3. All these diseases are the result of the exhaustion of special nerve-centres engaged at the time in some new and special development, which development takes place as it were in successive segments or portions. In the first three months the special senses are evolved, and we have pseudo-meningitis; if these symptoms are treated wrongly convulsions will ensue, and death will seem to justify the diagnosis. Between the fifth and ninth months the teeth appear, and we have laryngismus stridulus. From nine to twelve months the stomach and digestion are developing, and we have a form of asthma called "rickets of the chest." Afterward the limbs grow markedly, and we have chorea. All these troubles he takes to be the result of nerve-exhaustion. 4. The disappearance of heat and expenditure of nerve-power are best met by the exhibition of cod-liver oil. The starchy and saccharine foods may have sufficed for the formation of the fatty tissues (the child may be quite fat), but are not serviceable for supplying nerve-power and for replacing the heat which disappears during growth. For these purposes it is necessary to exhibit some animal oil. 5. The due exhibition of cod-liver oil will, therefore, not only cure these ailments, but should in a great measure prevent them.

DIFFERENT METHODS OF TREATING CERVICAL CATARRH.—Dr. L'voff, of Kazan, has reported in the *Meditsinskoe Obozrenie* a number of observations made on the comparative value of different methods of treating catarrh of the cervix uteri. The total number of cases was 82. Of these, 36 were treated by mechanical scraping of the mucous membrane, 18 by means of powerful caustic applications, and 28 with weak caustics. The method of applying the weak caustics was, after washing out the vagina with warm water or a solution of boracic acid, to swab the cervical canal with tincture of iodine or with a ten per cent. solution of chromic acid. This was done once a week, plugs soaked in glycerine of tannin being also used every other day. The strong caustic application consisted of a bougie made of sulphate of zinc and alum fused together. This was allowed to remain in the canal till it had all dissolved, which took place usually in one or two hours. Afterward the mucous membrane presented a white appearance, due to the eschar. This fell off in five or six days, during which time warm vaginal douches were administered and plugs of glycerine and iodoform inserted every alternate day. In the cases treated by scarification an iodoform and glycerine plug was left in for twenty-four hours, and the patient was then sent home. The results of these different methods of treatment were that the mild caustics ultimately effected a cure, but required at least two months to do so; while the severer methods—that is to say, the fused zinc and alum, and the scarification—produced a permanent cure in about a fortnight. The author adds that no unpleasant symptoms were caused by either the caustics or the scarification in any of the eighty-two cases.

SIMPLE METHOD OF ESTIMATING THE EFFECTS OF RESPIRATION.—MM. Hanriot and Ch. Richet have described a method of measuring the oxygen inhaled and absorbed, also the carbonic acid formed, during respiration, which is much more simple than the usual method by weighing, and is adapted for carrying out at the bedside. A gas-meter measures the volume of air inhaled and a second, that of the air expired; this air is then passed through potash, and subsequently through a third gas-meter. The difference between the second and third meters, of course, gives the carbonic acid formed, and the difference between the first and third, the oxygen absorbed.

THE CHOLERA IN VALENCIA IN 1885.—We have received a very voluminous report, presented to the Ayuntamiento of Valencia, concerning the epidemic of cholera which occurred in that city in the summer of 1885. The work has been prepared with great care, and is a valuable addition to the literature of cholera. Numerous maps and plans add to the usefulness of the report.

CROTALUS OR RATTLESNAKE POISON—ITS SPHERE OF ACTION AND USEFULNESS.—Dr. Alfred Drysdale, in the *Medical Press and Circular*, December 8, 1886, presents a scholarly article on this subject. Regarding the therapeutic application of crotalus he says: "The practical value of crotalus in the treatment of disease has been abundantly proved, if clinical experience is to be accepted as proof, which in the face of the great *post hoc propter hoc* dilemma must be considered as doubtful. All that can be said in this respect is that the data forth

coming are as reliable as those which have established the reputation of many of the reigning therapeutic favorites. The main application of this remedy is in the pernicious fevers, where the whole mass of the blood is vitiated, probably as a consequence of the diminution or loss of vitality of the protoplasm composing the leucocytes. A condition is well known in cases of almost all the fevers, and in pneumonia, where the patient is so reduced in strength that he can only lie on his back, usually with eyes open; the hands are seen to be tremulous and in incessant motion—what is called carphology and subsultus tendinum being present—the tongue is dark-brown, especially in the centre, and conveys to the sensation a roughness like that of a brick; the pulse is extremely rapid (140, 150, or more) and irregular; muttering delirium may be present, but the patient is evidently too weak to utter loud sounds. This condition, known as the 'typhoid state,' whether supervening upon a continued fever, pneumonia, or mere senile asthenia, is well and successfully treated by drop doses of solution crotalus, 1 in 100, repeated every two hours. Most medical men have met with a condition of body, usually at the end of an organic complaint of long standing, such as Bright's disease, phthisis, mitral disease of the heart, etc., but sometimes merely from age added to want or deficiency of essential ingredients of the food even in young people. The patient at once strikes spectators as having a wretched aspect—the face is waxy and transparent, chlorotic in hue, restless in expression, the eyes bleared and sunken, the lips white and covered with sticky exudation; slight injuries, pressure of clothes, etc., are apt to produce ecchymoses; purpuric rashes, indolent suppurations, or even gangrene, are common. Extravasated blood is liable to make its appearance in almost any tissue, organ, or secretion of the body. Such a condition, whether following upon organic disease or due only to insufficiency or improper quality of the food (scurvy), is well treated by drop doses of crotalus solution (1 in 100); the blood is gradually brought to a healthy condition, where this is possible, and in other cases amelioration and prolongation of life may be confidently looked for."

Bone-Marrow and Pernicious Anæmia.—Dr. H. Chr. Geehinnyden reports (*Virchow's Archiv*) the results of his very extensive researches upon bone-marrow (two hundred and fifty cases), and comes to the conclusion that it is concerned in the production of pernicious anæmia.

Fever Hospitals in Paris.—The sanitary committee of the municipal council of Paris has recommended that two fever hospitals be erected in two extremes of the city for the accommodation of patients suffering from whooping-cough, measles, scarlet fever, or diphtheria. Each hospital is to have separate pavilions for each of these diseases.

Deaths from Ear Disease.—Dr. Ariza, writing in *El Dictamen*, asserts that every person who has had suppurative otitis media, dating from infancy, dies from the consequences of this affection before or during early adult life. Death in these cases results from caries, pyæmia, thrombosis of the cranial sinuses, meningitis, encephalitis, or abscess of the brain.

Chlorodynomania.—A husband lately complained at the Westminster Police Court that his wife, aged thirty, would drink three or four bottles a day of chlorodyne. She was, he alleged, entirely destroying her own mind, and ruining him in pocket.

The Australian Medical Association has presented a petition to the government asking that vaccination be made obligatory; that no person be allowed to practise medicine who has not had some hospital experience; and that a pension be given to the widows and orphans of medical men who have died in the discharge of their duty during an epidemic.

The Elastic Ligature for Uterine Fibroids.—The removal of uterine fibroids by means of the elastic ligature having been recently adopted by Professor Slavyanski in four cases, a paper has been published by one of his pupils, Dr. Zhabotinski, dealing mainly with the history of this method of operating. He has collected accounts of 216 cases, of which 151 are British (44 being Dr. Robert Lee's), 27 French, 20 German, 10 Russian, 5 American, and 3 Italian. Of these, 18, or 8.3 per cent., proved fatal—8 from peritonitis, 3 from septicæmia, 3 from exhaustion, 1 from pleurisy and peritonitis, 1 from meningitis, 1 from tetanus, and 1 from an accidental disease. In 12 of these, death occurred before the tumor came away, and in the remaining 6 after separation had taken place. The author thinks that the opinions of West and McClintock on the dangerous character of this method of procedure were formed on the results of too small a number of cases; and that as most of the published cases occurred in pre-antiseptic times, the danger with modern methods may be looked upon as very slight. The mode of procedure which Professor Slavyanski adopted, and which in Dr. Zhabotinski's opinion is the best, is to cut away the tumor after the elastic ligature has been applied to the peduncle. This seems to have given the best results, even before the days of antiseptics. The main indications for the elastic-ligature operation are a pedunculated condition of the tumor, an accessible situation, and a disposition to hemorrhage.

Cod-liver Oil.—M. Carles, Professeur Agrégé at the Faculty de Médecine of Bordeaux, has recently re-affirmed that the cod-liver oil which is lightest in color is the purest and the most easily assimilated. The deep color frequently seen in cod-liver oil is owing to more or less putrefied livers having been used.

The American and the British Medical Association.—Dr. Davis has returned from the Brighton meeting of the British Medical Association full of admiration and kindly feeling toward his professional brethren in England, and speaks highly of the cordial reception with which he met, and of the opportunities which were afforded to him and his brother representatives of offering a welcome to intending visitors at the approaching congress. He does not, however, appear to have gathered a very clear idea of the constitution of the Association, for, oddly enough, he speaks of the Council of the British Medical Association as being an imperfectly representative body, while, on comparing the constitution of the English with the American Association, it is very easy to see that the British Medical Association is by far the more democratic in principle, and more thoroughly representative in character, seeing that its Council appears to be elected wholly by the branches, and its presidents by the local profession in each district in succession in which the annual meetings are held. The presidents of the meetings so elected by the common vote of the profession are apparently the only permanent members of the Council. On the other hand, the American Medical Association is reproached with being very "cliqueish" in its constitution, being made up of delegates from county medical societies, which are often controlled by small knots of men, and are by no means, in all cases, widely representative. It is, however, natural that Dr. Davis should prefer a constitution which he took so much part in framing to that of any other body. It cannot be said, however, that the American Medical Association is so prosperous or widely representative, or so robust as its friends could wish. It has a relatively small membership. Its journal has as yet but a very secondary position in literature, and the Association cannot be said to exercise anything like the influence which it would do if it were larger, more comprehensive, and more national in character. Its aims are high, its principles sound, its finances secure; its development is alike to be desired and anticipated.—Correspondent of *British Medical Journal*.

SYPHILIS AND PREGNANCY.—A series of very remarkable clinical observations on syphilis in pregnancy have recently been made by M. Hirigoyen, at the Maternity Hospital in Bordeaux, from which he concludes that, from an obstetric point of view, both abortion and natural labor take place in syphilitic patients exactly as in healthy women. In certain exceptional cases, however, difficulties attributable to syphilis may arise, such as hemorrhage from partial adherence of the placenta, rigidity of the os, etc. Finally, women suffering from primary or secondary syphilitic lesions in the genital organs are rather predisposed to puerperal accidents, and requre more attention on the part of the attendant than other women. The following is a summary of the observations, which extended over a period of two years: 1. In the lying-in wards, in Bordeaux, the proportion of syphilitic to other patients was five per cent. 2. Five-sixths of them were unmarried. 3. Syphilis in a pregnant woman tends to bring about premature labor. 4. The duration of the disease seemed to have a very decided influence. 5. In eight cases of pregnancy in syphilitic women who had had the disease for one or more years, only two children were born alive, and these were very puny. 6. In twelve cases, in which the mother had contracted the disease during the first four months of pregnancy, the fœtus was in every case stillborn. 7. When the mothers had become affected between the fourth and the sixth months of pregnancy, the fœtus died in about half of the cases. 8. When syphilis had been contracted during the three last months of gestation, the proportion of living children was a little more than one-half—four out of seven. 9. Out of thirty-three cases of pregnancy in syphilitic women, living children were born in eight. 10. Syphilis may give rise to difficulties during labor, and also to subsequent complications, but this is rare. 11. To be effectual, antisyphilitic treatment should be administered from the very beginning of pregnancy, and continued throughout. The treatment should be perseveringly carried out, in order to prevent accidents in future pregnancies.—*British Medical Journal.*

DRUGS IN THE MANAGEMENT OF CASES OF ENLARGED PROSTATE.—In the course of a paper in the New York *Medical Journal*, Dr. F. W. Rockwell says: "Three drugs are at the present time given with the belief that they exert a direct influence on the disease. I name them in order of their value so far as I have personally been able to judge of their effects. They are ergot, potassium iodide, and chloride of ammonium.

THE MALTHUSIAN MEDICAL LAW.—Statistics show that, while the population is increasing annually at the rate of less than two per cent., the annual increase of physicians is five and a half per cent., a condition that cannot exist without change through many centuries without one inevitable conclusion—a population composed entirely of physicians.

INTERNATIONAL HEALTH CONGRESS AT VIENNA.—The Executive Committee of the Sixth International Health Congress, which is to be held at Vienna from September 26 to October 1, 1887, has already issued its preliminary programme. The Congress is under the patronage of the Hereditary Prince of Austria, and the following are honorary presidents: The Ministers Taaffe and Gautsch, Statthalter Possinger, Landmarschall Kinsky, and the Bürgermeister of Vienna, Herr Uhl. The president of the Congress is Hofrath Professor Schneider. The council consists of the vice-presidents, Hofrath von Tuama, Professors Böhm, E. von Hofmann, and many other notabilities. The subscription of each member of the Congress is ten florins. Each member who announces two months beforehand his intention of taking part in the Congress, will receive a copy of the reports (*Expositions-referate*) which appear before the meeting of the Congress, and also a copy of the general report, which will be published afterward. At the two general meetings only lectures will be delivered; at the sectional meetings there will be discussions of the reports. Papers which have already been published, and which have already been read before scientific societies, will not be received.

THE RELATION OF PHYSICIANS TO THEIR MEDICAL SUPPLIES.—The following is from the January, 1887, *Ephemeris*, by Dr. Squibb: "There are a large number of physicians who, for both therapeutics and materia medica, depend largely, if not mainly, upon the travelling salesmen and their pamphlets and lists, and on the advertising pages of the medical journals. The relations of this class to their supplies are most simple and most favorable. They come in very direct and very close contact with the sources of their supplies, and have much less trouble than any other class of artisans. With others, smarter, more ingenious, and more plausible than they to think for them, and then to apply vigorous mercantile principles to their wants thus suggested for them, they have the least practicable amount of thinking for themselves to do in regard to their remedies and the novelties of the day, and, therefore, as they argue, more time to think of and study out their cases. To this class the ready-made prescriptions in the form of beautifully-colored and coated pills, or palatable solutions and mixtures, do not appeal simply as gratifying various degrees of laziness, or indisposition to think for themselves, but they present themselves as true labor-saving devices, skilfully prepared for the over-worked ability to use them, and as giving more time for the higher and more scientific researches of the profession."

PROPRIETARY TONICS AND BITTERS.—The analysis of the Massachusetts State Health Board shows that almost all the various tonics, bitters, and other temperance drinks contain from eighteen to fifty per cent. of alcohol.

"A BOOK FOR EVERY WOMAN," by a woman doctor, is now receiving the castigations of our Western medical contemporaries. It is written by a woman, who, graduating in 1881, speaks in 1886 of the numerous cases met with in her long professional career. It advises against abortions, but tells how conception can be prevented, and it has been editorially indorsed by the St. Louis *Evangelist* as a work to be put in every woman's hands. Of prevention of conception she says: "Some of the appliances sold for this purpose are a sure prevention by mechanical interference. If the material is pliable, the only positive injury is from preventing complete interchange of magnetism, and the harm may be considered more a negative than a positive one." Again: "By some also a theory called sedular absorption is advanced. In this, intercourse is had without culmination. No discharge is allowed. People practising this method claim the highest possible enjoyment, no loss of vitality, and perfect control of the fecundating power." This is the theory on which Guiteau was fed while living in the Noyes Free-love Community.

THE LAST OF THE MEDICAL MAIDENS.—The thirty-eight female students who have entered their names for the next examination will be the last to be admitted to the Russian School of Medicine for Women, that establishment being about to be closed after an existence of fourteen years.

THE SATURATING TREATMENT for typhoid fever is being popularized in the columns of the *Southern Practitioner*. Dr. G. W. Renfro concludes an article on treatment as follows: "Saturate your patient with turpentine and pickle him in acid, and he will not die of typhoid fever." Dr. J. W. Grace offers, as an amendment: "Saturate your patient in turpentine, pickle him in acid, smooth him out with opium, and salt him down with quinine, and he cannot die."

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LOCAL TREATMENT IN DIPHTHERIA.[1]

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Of the two great divisions of the therapeutics of diphtheria, the constitutional and the local, each is of vital importance as the essential complement of the other. It is, therefore, from no disposition to ignore the former that the latter is chosen as our present topic, but rather from the impossibility of profitably considering both within the limits of a single paper and a single discussion. The latter has been chosen instead of the former, because, while there is certainly not complete unanimity in the profession in respect to the one, there is still greater diversity of views concerning the other.

It is not the object of this paper to present new therapeutical methods, nor any new array of clinical facts, but rather to inquire, in view of clinical facts already in our possession, what objects may be rationally aimed at in local treatment, what kinds of methods are suitable, upon what principles their utility depends, and what are the limitations beyond which their employment must be futile or injurious.

The factors to be dealt with in diphtheria are, first, a *specific poison* or contagium, which first causes the disease and is being constantly reproduced so long as that continues. Its precise nature and mode of propagation are not known, and need not now be discussed. That this poison acts by direct local contact or implantation in some cases is beyond question. The fact that the disease usually occurs in limited and non-symmetrical areas in the outer avenues of entrance of inspired air, the nasal passages and the oral and pharyngeal cavities, is strongly suggestive of the probability that this is its mode of reception in the great majority of cases. This consideration in turn suggests the probability that antiseptic treatment of those regions, in those who are exposed to the contagion or the epidemic influence of the disease, may be of prophylactic utility. No facts, however, are known to the writer which bear upon this point with sufficient definiteness to be worthy of mention.

Second, *inflammation*. This, if pre-existing from other causes, may invite the invasion of the disease. It is an essential part of the morbid process in the disease. Its extent and intensity are usually, in its earlier stage, in proportion to the severity of the disease. Its aggravation by any extraneous cause tends to the aggravation of the disease, and it ceases only with the cessation of the disease. From these facts result important and generally recognized therapeutical indications; namely, first, the curative treatment of pharyngeal or nasal catarrhal inflammations during the endemic or epidemic prevalence of diphtheria as attended with especial danger, and, second, the employment of the earliest and most efficient possible antiphlogistic measures, local as well as general, after the invasion of the disease, in the hope of mitigating its intensity and limiting its extension; also an important contraindication, namely, that of all local agents or methods which are liable to cause irritation.

Third, *membranous exudation*. This is a usual and probably an invariable result of diphtheritic inflammation. It varies greatly in extent, in texture and density, in thickness, in the depth to which it penetrates the mucous membrane, or even its subjacent tissues, and in its persistency and duration. It is a most important and formidable element in the disease, not only from the fact that in certain locations it interferes mechanically with deglutition and respiration, but even more so because in any situation it shuts in beneath itself the poison which is there being produced, prevents its being diluted and washed away by the saliva or the mucous secretions, or by therapeutical agents employed for that purpose, thus favoring its absorption. The obstacle which it thus presents to local antiseptic measures varies, of course, with its extent—its density, its thickness, and its depth being, in some cases in which these are very great, practically an insurmountable obstacle to efficient antisepsis. Fortunately, in the majority of cases these are not so great that something may not be effected by appropriate measures, which will be presently referred to, through transudative action.

But, formidable as are the dangers attending the presence of diphtheritic membrane, this presence is often to be preferred as the less of two evils, the greater evil being its premature removal. If left to itself it becomes detached if the patient survives, after a longer or shorter period, a sufficient reparative process having usually preceded and prepared the way for that detachment to enable it to take place with comparative safety. It is true that it is often, even under those circumstances, replaced by a second formation of membrane, but this latter is usually less formidable and of shorter continuance than its predecessor. Very different is it when, by injudicious haste on the part of the physician or some unfortunate effect of the crying or struggling of the patient, the membrane is torn off before that point in its history is reached. There is liable to be an immediate increase of inflammation, with symptoms of shock and general irritation, and the exudation which ensues is apt to be more serious and extensive and the absorption of poison greater than before.

It is often the case that one portion of a membranous patch which is comparatively shallow and superficial becomes detached, while another portion, which is deeper, still adheres. There is then great temptation to hasten the cure by its removal; but, on the contrary, this is, as a general rule, to be carefully avoided, as attended with danger. The utmost gentleness in the giving of food and medicines should then be practised. The writer has more than once seen the whole aspect of a case that was progressing favorably suddenly and fatally changed for the worse by an opposite course, or by some unfortunate accident, and indeed has long ago learned to look upon the period of the detachment of deep membrane in grave cases of diphtheria as a dangerous one.

The destruction of diphtheritic membrane by caustic applications, and even by the actual cautery, has been practised and advocated by some, and it is difficult to read the therapeutical literature of diphtheria, from Bretonneau down to recent medical journals, and avoid the conclusion that in some cases the disease has been arrested at an early stage by such procedures. The theory of their action is that, by destroying the specific morbid elements in the local disease, they substitute therefor a simple ulcer. This is probably the true indication for treatment in cutaneous diphtheria; but it need

[1] Read before the Section on Practice of the New York Academy of Medicine, March 15, 1887.

hardly be remarked that in the widely different conditions existing in diphtheria of the mucous membranes of the pharynx and nares the safe accomplishment of this object by such formidable agencies, must for obvious reasons be, in a large proportion of cases, difficult or impracticable from the impossibility of making their action at once sufficiently extensive and thorough and sufficiently limited. It is doubtless for this reason that the employment of such agents in the local treatment of diphtheria has been by the great majority of the profession discarded. Yet the possibility of their safe and successful use in certain favorable cases at an early stage of the disease, by sufficiently accurate methods of application and with the exercise of due caution and skill, is a topic worthy of consideration.

But leaving out of the question the dangers attending the employment for this purpose of violent avulsion or corrosive applications, the important inquiry remains, Would the rapid destruction of diphtheritic membrane, even by means which are in themselves innocuous to living tissues, were such means in our possession, be, as a general rule, advantageous or detrimental? This inquiry can, of course, be finally answered only by experience, but some considerations make it seem probable that the answer must be that in many cases it would be detrimental. It must be remembered that diphtheritic membrane, hostile as its presence is to our therapeutical endeavors, yet performs one important function of the epithelium at the expense of which it exists—that of protecting the tissues beneath it from external irritation. It must be remembered also that the importance of this protection must be in direct proportion to the depth to which the membranous exudation extends. In the numerous cases in which it is comparatively superficial, involving only the most external epithelial layers, its removal might often be attended with no very serious dangers. But these are the cases which tend to recovery, and are of comparatively transient duration under any rational mode of treatment. But in those cases in which the necrobiotic and exudative process has penetrated deeper, the conditions which would follow its rapid removal must be much more serious. In its place we should have a denuded and highly sensitive surface in a state of inflammation and the tissues immediately beneath it permeated with the specific poison of the disease, to which the very impact of air or of the perverted mucous secretions or the mechanical movements of deglutition would be painful and irritating. It seems inevitable that the sequel should often be intensified diphtheritic inflammation, with all its deplorable train of local and remote results.

It seems probable, then, that, undesirable as is the presence of diphtheritic membrane, its rapid and entire destruction by any means whatever is not, as a general rule, an end to be aimed at in treatment. What, then, are rational objects of endeavor in dealing with this most formidable element of the disease? They would seem to be the following: First, and as a general rule, to effect its softening and thinning by means of gradual and non-irritating solvents, thus diminishing the obstacle which, by its thickness and density, it presents to antiphlogistic and antiseptic treatment until such time as the subsidence of inflammation beneath it and the reparative processes of nature shall result in its complete and safe detachment; second, in exceptional cases, in which its rapid removal or disintegration is urgently demanded, to effect that object, if it be practicable, by such means as will cause the least irritation to the living tissues. What is lacking in brilliancy to this therapeutical programme will probably be more than compensated in the aggregate of cases by satisfactoriness of results as compared with those of more hasty and aggressive methods. In 34 cases that recovered out of 38 that were treated in accordance with the principle now advocated, as was reported by the present writer in this place seven years ago, the duration of membrane was stated to be as follows: Two of two days, 2 of three days, 4 of four days, 5 of five days, 6 of six days, 2 of seven days, 1 of eight days, 1 of ten days, 1 of twelve days, 2 of thirteen days, 3 of fourteen days, 1 of fifteen days, 2 of seventeen days, 1 of twenty-two days, and 1 of twenty-seven days. Perhaps it would be well if it were more generally appreciated that the true object of treatment in diphtheria is not so much to cure the disease as to bring our patients through it alive.

Fourth, the *absorption into the circulation of poison* from the seat of the local disease, resulting in the contamination and impoverishment of the blood, and a variety of organic morbid changes which need not now be enumerated.

The error that constitutional symptoms peculiar to diphtheria usually occur before membranous exudation takes place is one which has been too long perpetuated and too often repeated. It is not true that the initial or ante-membranous stage of diphtheria differs in any of its clinical aspects from the corresponding stage of various other forms of angina. There is not in the one a higher or a lower temperature than in the others; there is not greater or less nervous disturbance; there is not greater or less frequency of an antecedent chill or of a prodromic period of depression.

The absorption of poison undoubtedly begins, as a general rule, with the beginning of membranous exudation, and occurs, to some extent, in every case, so that the disease, although probably in the great majority of cases a primarily local one, becomes at an early period also constitutional. It is important to note, however, that the rapidity and amount of constitutional infection vary directly, as a general rule, in proportion to the extent, and more particularly the depth, of the membranous exudation. It is also true that it varies inversely in proportion to the efficiency with which local antiseptic treatment is employed. This fact the writer has seen demonstrated in many cases. In a paper which he had the honor to read before the Academy in 1876, and which is contained in the "Transactions" of the Academy for that year, were presented the results of many observations confirming this statement, in a series of one hundred and seventy-nine cases. These observations, which were in accordance with many earlier and later ones by others, may be briefly summed up as follows: Many cases of diphtheria, in which local treatment was early and persistently employed, continued throughout their course to exhibit little or no evidence of constitutional poisoning. In many others, in which evidence of that condition already existed, it disappeared or notably diminished under the employment of such treatment when that was commenced before the effects of the poisoning were already irremediable. Finally, even those cases in which the treatment failed to prevent fatal diphtheritic toxæmia were, in reality, illustrations of the truth of the principles on which its utility is based, being invariably those in which, for various reasons, either in the nature of the cases themselves or the attendant circumstances, it could not be or was not efficiently employed. Moreover, these fatal cases by toxæmia were so few in proportion to the whole number and to their usual ratio of occurrence as to leave no reasonable doubt of the general efficacy of this therapeutical measure in fulfilling the important purpose for which it is employed. In a second paper, read before the Academy on March 4, 1880, and published in THE MEDICAL RECORD of March 27th of that year, which paper was based on a series of forty unquestionable, fully attested, and fully described cases of diphtheria under the most efficient possible application of this method of treatment, it was stated that of the whole number of cases only one terminated fatally from the effects of toxæmia, and that one under such peculiarly unfavorable circumstances (which were described) as to make it one of the exceptions which "prove the rule." The following statement was also made: "The urine was tested for albumen in fourteen of the foregoing cases, always when the disease had continued for some days, and usually when it was at its

height. That it was not tested in all was simply because some of the patients were so very young, and from negligence in other cases. In only one (Number 11) was any trace of albumen found." That exceptional case was typical, and the following brief outline is therefore condensed from the full account of it in the paper referred to. In that case a patch of particularly deep and dense membrane on the posterior side of one tonsil persisted after the rest had disappeared. On the sixth day, urine scanty and heavily albuminous; marked symptoms of uræmic poisoning. This condition continued during the two following days. On the ninth day the patch of membrane had disappeared. On that day the urine was considerably increased in quantity and contained a smaller proportion of albumen, the general condition of the patient being improved and encouraging. On the tenth day the membranous patch had re-formed. Urine again scanty and heavily albuminous; return of the previous unfavorable symptoms. This condition of things continued with gradual improvement for eight days more, during which the membranous patch persisted. At length it was again and finally detached, and the albumen rapidly disappeared.

Since, as has already been remarked, a certain amount of toxic absorption probably occurs in every case of diphtheria, and since, nevertheless, many patients recover from the disease without permanent injury, it follows that nature is capable of tolerating the presence of, and of eliminating a certain amount of the absorbed poison. The facts that have just been referred to show that local antiseptic treatment, by removing the poison-charged secretions and promoting osmotic interchange of fluids through diphtheritic membrane, may so far diminish this absorption as to keep it within the limits of that amount in a large proportion of all cases. From this fact results the therapeutical indication which is probably the most important one in the treatment of diphtheria. The obstacles and difficulties which a small proportion of cases oppose to the fulfilment of this indication constitute its most perplexing and deplorable limitation.

Fifth, the *emanation of poison from those affected with the disease*, and the consequent infection of others.

The records of 201 dispensary cases included in the papers just referred to show that 2 occurred together or consecutively in the same family in eighteen instances, 3 in five instances, and 6 in one instance, while 144 were solitary cases subsequently to the commencement of antiseptic treatment, although not a few of them had been preceded by other cases under other treatment. Considering that these cases occurred in tenement-house rooms, where little or no separation of the sick from the well was practicable, and that the majority of them occurred during the great epidemic in that district of 1875, the supposition seems not unreasonable that the amount of infection resulting from them was in some degree limited by the treatment employed. This seems all the more probable from the fact that only two adults among all the parents and others who took care of them contracted the disease.

From the foregoing considerations, it appears that the principal objects of local treatment in diphtheria are the following: First, to subdue inflammation; second, as a general rule, to which there are exceptions, to effect the gradual and superficial softening and thinning of false membrane, rather than its rapid and complete removal or destruction; and third, by antiseptic measures to minimize the absorption and dissemination of poison.

It is next in order to inquire what are the most suitable means for the accomplishment of these objects. This inquiry will probably be most conveniently made by considering the various methods of topical application, and, in connection with each, some of the remedies to which it is best suited.

First among these methods is that of *internal administration*, for the sake of local effect in the mouth and throat. This method has the advantages of simplicity and of ready and general availability, but as the remedies employed by it are usually selected for the sake of their constitutional effect as well, it belongs only in part to our present subject.

The frequent swallowing of water, milk, or any innocuous fluid is doubtless useful by diluting and washing away foul secretions. Ice and iced beverages have a well-known and valuable effect in the presence of acute inflammation.

Among medicinal agents the tincture of the chloride of iron and the chlorate of potassium undoubtedly hold the leading place in general use and estimation. Their action is too well known to require present remark. One or two points, however, in relation to the best mode of administering them are worthy of passing mention. Anyone can easily be convinced by his own sense of taste that the disagreeable acridity of the tincture of iron is pleasantly covered by glycerine when mixed with it in the proportion of one to eight, but that this is less perfectly effected by a smaller proportion of the glycerine. Children often appreciate this difference most keenly. Hence this formula is suitable in their cases: ℞. Tinct. ferri chlor., f ʒ j.; glycerinæ, aquæ, āā f ℥ j. M. et Sig.: A teaspoonful every hour. Remedies administered internally in diphtheria must, to have any valuable local effect, be given frequently, and the result of frequent struggles may be disastrous. Hence the importance of avoiding any unpleasant medication in this disease in the cases of young children can hardly be exaggerated.

Again, many diphtheritic throats, especially of young children, are in a state of such exquisite sensitiveness that tincture of iron in any combination whatever will cause local pain and irritation, and not infrequently reflex vomiting. Hence the writer has been accustomed to prescribe the chlorate of potassium separately in the mixture: ℞. Potass. chlorat., ℈ij.; glycerinæ, f ℥ ss.; aquæ calcis, f ℥ ijss. M. A teaspoonful to be given in half-hourly alternation with the tincture of iron, but to be substituted for it whenever the latter shall produce any unpleasant effects. This has been found very valuable in the class of cases referred to. These may seem to some trivial details, but success in the local treatment of diphtheria often depends on careful attention to details and even minutiæ.

The experience of the writer accords with that of many others, that the tincture of iron is of positive value in the treatment of many cases of diphtheria, and in some is advantageously given in large doses, but has not been that it is essential to the successful treatment of most cases in which other appropriate remedies are employed.

Among other drugs which have been administered by this method, partly for local effect, bromine and the benzoate of sodium seem to have especial claims to mention. Almost incredibly good results from a system of treatment in which the latter was the principal agent were reported by Dr. A. Brondel in the *Bulletin Général de Thérapeutique* for November 15, 1886.[1]

Gargles occupy a large place in much of the therapeutical literature of diphtheria, notwithstanding the fact that a large proportion of all our patients are children too young to gargle. Even in older patients the frequent use of gargles is unpleasant and fatiguing and, moreover, in many cases inefficient from their not freely reaching the posterior part of the pharynx.

The washing of the throat and the application of remedies to it by means of a *syringe* is much more generally applicable, and is usually preferable to the preceding method. In some cases the throat has a tendency to fill up with tenacious and offensive secretions, which are locally irritating and greatly increase the danger of systemic infection. These may be readily dislodged and removed by syringing, not only from the anterior side of the soft palate, the tonsils, and the faucial pillars, but

[1] See THE MEDICAL RECORD, January 8, 1887.

from their posterior side as well, and with less pain and fatigue to the patient than are caused by gargling. An ordinary ounce or half-ounce syringe with a straight tip and a ring in the handle is a suitable instrument, and a solution of common salt, in the proportion of a drachm to the pint, an appropriate fluid for this purpose, though a great variety of combinations known as gargles may, of course, be thus applied.

But the recommendation of this method, which is, under proper restrictions, both efficient and safe, is accompanied with the grave responsibility of calling attention to its limitations and dangers, which are important.

The pharynx, with its abundant supply of very sensitive nerves, was obviously never intended by nature to tolerate rude manipulation or violent impressions of any kind. The effect of the violation of this law is shock, prostration of strength, and undesirable reactions both local and remote. There is great power of irritation in the impact of a stream of water thrown forcibly from a syringe. Hence the syringing of an inflamed throat should be done only with extreme gentleness, and not too frequently. Syringing the throat should never be practised when it contains diphtheritic membrane in the stage of partial detachment, as this is very liable to be torn up thereby with the results which have already been referred to. The writer saw, not long ago, a melancholy illustration of this danger. Syringing of the throat should, as a general rule, be employed only in those cases in which spraying is impracticable.

The fact that toxic absorption is particularly liable to occur in nasal diphtheria is established by general observation. *Syringing of the nasal passages* in that form of the disease has consequently been so long and so widely practised that arguments in behalf of its importance would be superfluous. There are, however, questions relating to the method of performing it, and to its limitations, respecting which there is less complete concurrence, and which are important enough to be worthy of consideration.

Simple as is this procedure it has often been made, by bungling methods, or want of method, very formidable and distressing. Its principal difficulty arises from the resistance which it usually provokes in young children, whose struggles, if not properly controlled and prevented, may be a formidable obstacle to the operator and exhausting to themselves. This difficulty will be found to vanish if the following brief and simple directions are followed, which the writer takes the liberty of repeating from the first of the papers to which reference has previously been made: "The child should be seated across the lap of one person, who should secure his hands. Another should stand behind him and support the back of his head (which should be inclined forward) against his breast, holding it firmly with a hand on each side. A third can then easily make the injection into the nostrils. The more strength and decision are manifested, the less is the child likely to struggle." Any small syringe, such as was just described, will answer in expert hands—and this task should never, if it can possibly be avoided, be entrusted to any others. Tepid salt water is a suitable fluid, but any similarly unirritating and antiseptic one would probably be equally appropriate. The fluid should be thrown with force enough to cause it to return partly by the other nostril, and partly by the throat, if the nasal passages are pervious. If they are not so, perseverance in the use of gentle injections is, as a general rule, safer than the use of very forcible ones. The remarks that were made as to the irritating and prostrating effect of violent injection of the pharynx, apply also to that of the nasal passages. The injections should be repeated sufficiently often at each *séance* to effect, if possible, a thorough cleansing.

A very important question remains. How often shall this process be repeated? In both of the papers previously referred to it was stated that it was in all of the cases therein included performed only by the writer himself, or the physicians who assisted him, and was usually done only two or three times a day. The results left little to be desired. Among the forty cases described in the second paper were sixteen of nasal diphtheria, including very grave ones, in fifteen of which nasal syringing was employed. All of these but one recovered, and the failure in that one was due to exceptional circumstances which have already been referred to. In the much larger number included in the first paper the results were nearly, or quite, as favorable, but cannot be stated so accurately, as the records of all details are less complete.

The writer has in some cases tried the experiment of its more frequent repetition, but the effect was in most so distinctly that of increased prostration and local irritation that it was soon abandoned.

It has been considered necessary by not a few that, in order to secure the efficiency of this procedure, it should be repeated very much oftener—as often by some as every hour. The writer has personally known, in consultation and otherwise, of this having been done in quite a number of cases with successful results, though this has not been invariable. It will, however, be agreed that what can be tolerated by some patients in this disease cannot be endured by all. It will also be agreed that if the lesser frequency of its performance is capable of effecting the object sought, it is preferable to the greater frequency. It will be still further agreed that its effect should in all cases be carefully watched, and that its frequency should never exceed the powers of tolerance of the individual patient.

The choice between enforcing unpleasant and harassing antiseptic measures, on the one hand, and taking the chances of fatal systemic infection on the other, is occasionally in this disease a delicate and perplexing one. The protests that have been made by some in society discussions and medical journals against the former have not been entirely without reason. The fact that some apparently very bad cases of diphtheria do recover without local treatment gives them additional weight. The danger of yielding to sentimental considerations or optimistic security, based on exceptional instances, in the conflict with this insidious disease, is illustrated in the following case: In October, 1880, the writer was called in consultation with Dr. E——, in a mild case of nasal and faucial diphtheria, and was requested to see it with him daily, and direct the treatment. It was the second day of the disease, and there was then no indication of constitutional implication. The child, aged four, was of a highly nervous and sensitive temperament. The family had only lately come under the professional care of Dr. E——, having previously employed homœopathy, and the mother of the child had an especial dread of all harsh and unpleasant therapeutical measures, which feeling the doctor naturally desired should be respected if possible. For this reason a compromise was made with the plain indication for immediate nasal syringing by postponing it, the case to be in the meantime carefully watched, and the urine to be tested twice daily for albumen, Dr. E—— to continue the application, which he was previously making, of carbolized vaseline to the interior of the affected nostril with a camel's-hair pencil. During the two following days the faucial deposit, which was slight and superficial, nearly disappeared, the nasal affection was apparently unchanged, no albumen in the urine, and the general condition of the patient comfortable and encouraging. On the morning of the fourth day the conditions remained about the same. The evening examination of the urine by Dr. E—— was prevented by unfortunate circumstances. During the night feverishness and vomiting set in and continued. On the next day the entire aspect of the case had changed: The urine was scanty and bloody, and loaded with albumen; the symptoms of septic and uræmic poisoning were marked; the nasal affection had become more serious. Nasal syringing was then attempted, but could not be persisted in on account of obstinate and exhausting epi-

taxis. Additional counsel was called in, but the child sank rapidly and died on the sixth day.

Spraying possesses important advantages, and is subject to certain important limitations. Its chief advantages are that it is in itself gentle and unirritating, and not very fatiguing; that by it remedies may be applied in a more direct, evenly diffused, and continuous manner to the oral and pharyngeal surfaces than by other methods, and that they may even, by the assistance of the inspired air, be made to reach the rima glottidis and the vocal cords. It has no valuable applicability to the nasal passages in most cases, and should never be made a substitute in them for syringing. The best instrument for general use is the Delano atomizer, or one of similar construction. Its point should not be thrust far into the mouth, and it should be remembered that even spraying may be done at too short range and too forcibly. Parents and nurses should be trained in its proper performance, as otherwise the spray is quite liable to be wasted on the roof of the mouth or the dorsum of the tongue. To employ it effectually, it is necessary that the mouth of the patient be opened widely. When the procedure is not thus voluntarily facilitated by the patient the writer has found it useless, or worse than useless, to attempt its accomplishment by force. Hence results a most important and unfortunate limitation—that it is not usually available in the cases of children under three years of age.

A great variety of antiphlogistic and antiseptic agents have been applied by this method, such as borax, boric acid, the benzoate of sodium, carbolic acid, listerine, chlorate of potassium, etc. Suitable formulæ for their use, which it is unnecessary to consume time in repeating, abound in text-books and medical journals. The advantages just referred to adapt it especially to the application of mild solvents to diphtheritic membrane.

The slowness of the solvent action of lime-water renders it useless in those emergencies in which rapidity of effect is essential, but does not preclude the possibility of its great utility in a large proportion of cases, in accordance with considerations which have been already presented. Its use was recommended in the two papers previously referred to, in the following combination: ℞. Acidi carbolici, ♏ x.; aquæ calcis, f ℥ iv. M. Sig.: To be sprayed into the throat for some minutes every half hour.

It is worthy of remark that the taste of this combination is very pleasant, but that a very slight increase in the proportion of the carbolic acid makes it less so, and liable to provoke resistance in children. The experience of the writer as to its practical utility may be briefly recapitulated as follows: It has been found to be a very efficient antiphlogistic. It has seemed to accelerate the disintegration and disappearance of superficial membrane, and to assist materially in the antisepsis of the deeper and graver forms. Its utility has not only been observed in faucial diphtheria but it has seemed to have unquestionable efficiency in preventing the extension of the disease into the larynx. In fully one hundred cases in which it was employed in the first series already referred to, it was stated that there was no instance of the subsequent occurrence of serious laryngeal complication, although this was threatened in several by the usual symptoms, and this was also true of the smaller number in the second series, although, as was fully shown, both these groups of cases were of at least the average severity or tendency to severity of true diphtheria as it occurs in this city. A few cases of well-marked laryngeal diphtheria, though of course not of the gravest type, recovered under the early and assiduous use of this remedy alone. The four cases that terminated fatally out of thirty-eight that were treated in the second series—three from laryngeal stenosis and one from toxæmia—were all in children so young that spraying could not be employed. In view of these facts, and their general accordance with the experience of not a few others, it will hardly be thought strange that the writer regards this measure as one of positive therapeutical value, in spite of its mildness and the slowness of its solvent action, and probably in no small degree from those very circumstances.

Of lactic acid and of pepsin it is probably safe to say that, though they have now been for some years before the profession, their practical value as solvents of diphtheritic membrane has not been satisfactorily demonstrated. The digestive solvents—trypsin and papayotin—are at present interesting subjects for experimental study. The former has been recommended in the formula: Trypsin, gr. xv.; sodii bicarb., gr. v.; aquæ, f ℥ ss.; to be applied in spray half-hourly.

The increasing of the solvent power of lime-water by the addition to it of liquor potassæ has been recommended in the treatment of laryngeal diphtheria. While this may be advantageous in cases in which rapidity of action is imperatively demanded, the fact that liquor potassæ, unlike lime-water, is liable, when used continuously, to exert an irritating effect on mucous membranes should limit its employment to such emergencies.

The *inhalation for local effect of vapor* by itself and as a vehicle for various medicinal substances is a well-known and approved resource in the treatment of laryngeal diphtheria. In administering lime by this method it is well to remember that the boiling of lime-water produces a vapor of water and not of lime-water. By the slaking of quicklime, however, a vapor is produced which contains lime. The inhalation of vapors containing turpentine, carbolic acid, oil of eucalyptus, compound tincture of benzoin, etc., is much valued by some as an adjuvant to other remedies.

The *direct application of various substances by means of a soft brush or pencil* may have the special advantages of precision and accurate limitation. It may therefore, in appropriate cases, be made the vehicle of more concentrated or more irritating applications than those which have been previously referred to.

Papayotin has thus been employed by Professor Finkler in combination with salicylic acid, applied about five times in the twenty-four hours; by Dr. Schoffer[1] in a five per cent. solution in water, applied every five or ten minutes; and by Dr. Jacobi[2] in the proportions, papayotin one part, glycerine and water each two to four parts, applied hourly, with results that are encouraging as to its utility.

Bromine in solution thus frequently applied, and also administered internally, constitutes the well-known method of treatment of Dr. William H. Thomson. From a large experience in a military hospital of the special utility of bromine in arresting grangrene the writer would be prepared to expect from it valuable effects in the local treatment of diphtheria, but has not thus employed it.

For escharotic effect upon diphtheritic membrane, nitrate of silver in strong solution has been much employed by some, and has the advantage that its action is superficial, and, with proper limitation, not especially irritating. Carbolic acid and the compound tincture of iodine, either pure or slightly diluted with glycerine, are highly recommended. The tincture of the chloride of iron, in the proportion of two parts to one of glycerine, and Monsell's solution, similarly diluted, have, in a few instances, been applied by the writer to particularly accessible and formidable membranous patches with favorable effect.

It is sometimes objected to the treatment of diphtheria by the methods which have been thus imperfectly sketched, that not only are they in severe and protracted cases wearisome to patients and nurses, but, in order to be effective, require from the busy physician an amount of personal attention which it is often difficult for him to give. The force of this objection must be frankly admitted, and indeed can be appreciated by none so fully as by those who have carried them out in large numbers

[1] Journal of the Society of Chemical Industry, 1885, p. 571.
[2] Therapeutic Gazette, 1886, p. 145.

of cases; but in view of the importance of the issues involved, its validity can be conceded only when it shall be shown that equally good results can be obtained by less arduous measures, which is a therapeutical "consummation devoutly to be wished."

LOCAL TREATMENT OF DIPHTHERIA.

REMARKS ON DR. BILLINGTON'S PAPER BEFORE THE SECTION ON THEORY AND PRACTICE, OF THE NEW YORK ACADEMY OF MEDICINE.[1]

BY A. JACOBI, M.D.,

PRESIDENT OF THE ACADEMY.

MR. CHAIRMAN: The ten-minutes rule precludes my spending more than a second on the expression of my gratification at having been present at the reading of Dr. Billington's paper, and noticing the fidelity with which he adheres to the sound principles laid down by him in a paper read before the Academy in 1876. My gratification is the more intense, as it may be known to some of you that we agree perfectly about most of the general principles in the treatment of diphtheria and their application. As a proof I refer only to my paper on "Diphtheria and Diphtheritic Affections" (*American Med. Times*, August 11 and 18, 1860); "Croup" (*Amer. Jour. of Obst.*, May, 1868); "Diphtheria and Diphtheritic Affections" (*Amer. Jour. Obst.*, February, 1875); "Treatise on Diphtheria," New York, 1880, and my article on "Diphtheria" in "Pepper's Cyclopædia," 1885, and in Gerhardt's "Handb. d. Kinderkrankh.," ii., 1877.

Thus in a discussion on the local treatment of diphtheria I am very much tempted, as you have been so good as to invite me to participate, to extract some of my own writings. As the time is brief, however, I shall content myself with fragments, and add such remarks as I may consider either urgent or new. But, at all events, I do not expect to cover the whole ground, like the lecturer of the evening.

Constitutional diphtheria must be compared with the septic absorption occurring in wounds and in the puerperal condition, and for that reason we are obliged to rely principally on the method of treatment that is most serviceable in cases of surgical wounds and puerperal fever, viz., local disinfection. It can be accomplished by removing, or rather dissolving, the membrane, or by rendering it innocuous, no matter whether it can be readily seen or not. For, after all, the presence of the membrane is the characteristic symptom of the disease, and by absorption the constant source of increasing infection of the system.

Papayotin is easily solved in twenty parts of water. It is certainly a solvent of membrane, and may be injected or brushed over the membrane, or used as a spray. In greater concentration, mixed with water and glycerine (1 : 4–8), I have applied it to the nose, throat, and the trachea, through the cannula, after tracheotomy, with fair results.[2] Trypsin is preferred by others for the same purpose.

The inhalation of steam is very useful in catarrh of the respiratory organs, and also in inflammatory and diphtheritic affections. In fibrinous tracheo-bronchitis it has proved quite successful. But it may prove dangerous by excluding oxygen and overheating the room or tent. Drinking of large quantities of water, with or without alcoholic stimulants, also invites the action of the muciparous glands and aids in macerating membranes. The internal use of ice and its local application can be very useful. But the cases must be selected for each and any of the remedial agents and applications.

In this connection I also refer to a statement of mine made in the *Am. Jour. of Obst.*, February, 1875, viz., that there is a possibility that moist heat, as it "softens healthy tissue as well as morbid exudations, may favor the penetration of the poison into deeper layers." While discussing this remark of mine in his paper read before this Academy on March 16, 1876, on "Diphtheria and its Treatment" ("Trans. Acad.," vol. i., pp. 286 sqq.), Dr. Billington says: "It has also seemed to favor the rapid superficial extension of the diphtheritic disease into the fauces, this having ensued in several of my cases which previously manifested no such tendency."

As steam will increase the secretion from the mucous membrane, and thereby aid in throwing off the membrane, it is advantageous mostly where there are a great many muciparous follicles under a cylindrical or fimbriated epithelium. Where there is pavement epithelium, and but few muciparous follicles—for instance, on the tonsils and on the vocal chords—and the membrane is rather embedded into the tissue than deposited upon it, the steam treatment will do very little good, to say the least.

Mouth and neck must be kept in a healthy condition. Stomatitis, chronic pharyngitis, hypertrophy of the tonsils, glandular enlargements, must be relieved or removed preventively. Acute catarrh of mouth and pharynx requires the use of potassium or sodium chlorate in doses not exceeding a scruple daily for a child a year old, one and a half to two drachms for an adult. The single doses must be small and very frequent, every hour, half or quarter hour. Large doses are dangerous, result in nephritis, and have proved fatal (*Am. Med. Times.*, 1860; Gerhardt, ii., 1877; THE MEDICAL RECORD, March 15, 1879; "Treatise," 1880).

I ought to add here that my explanation of the poisonous effect of chlorate of potassium has not been considered sufficient, methæmoglobinuria being substituted for nephritis. Still, Professor Stockvis, in a recent article containing observations and experiments, returns to my original view and discards methæmoglobinuria in favor of nephritis (*Arch. f. Exper. Path. u. Therap.*, 1886).

The usefulness of lime-water and lactic acid has been greatly over-estimated. Potassium salts have often been recommended, and as often found wanting.

Glycerine is a valuable adjuvant, both externally and internally, but not more.

Turpentine inhalations are deserving of further trials, though naturally they are more effective in purely inflammatory than in diphtheritic processes. I shall return to them later.

Inhalations of ammonium chloride, heated on a stove or burned on live coal, act favorably in catarrhal and inflammatory conditions, and deserve a further trial for the purpose of aiding in the maceration of membranes.

Sodium benzoate does not deserve the eulogies bestowed on it from theoretical reasoning.

Eucalyptus, sulphur, copaiba, and cubebs have been recommended, in preference to other applications, for their effect on catarrhal mucous membranes.

Bromine, both internally and externally, is warmly recommended by William H. Thomson.

Boric acid, in concentrated and mild solutions, has been recommended as a local application to membranous deposits generally, and to the diphtheritic conjunctiva in particular.

I may be permitted to add here that I frequently use saturated solutions—four per cent.—for nasal injections. It is an antiseptic of moderate strength, and very mild, being tolerated as well as a two-thirds of a one per cent. solution of warm salt-water. That property of it is very important. There is no disease in which it is of more vital importance to avoid everything which invites unnecessary resistance and waste of strength on the part of the patient. Not infrequently do I add boracic acid to the solution of corrosive sublimate used for nasal applications in either injection or spray.

Carbolic acid is useful both in local and internal administration according to the end to be reached; it may be used either in concentrated form or in a one per cent.

[1] Read in part only.

[2] Transactions of the Medical Society of the State of New York, 1886.

solution. When it is used for nasal injections care must be taken lest an undue amount be swallowed.

Salicylic acid acts as a caustic when concentrated; in moderate solutions it destroys fetor. Salicylates are antifebriles only.

Deliquescent caustics are dangerous. Injury of the healthy mucous membrane must be avoided. Mineral acids, and particularly carbolic acid, when their application can be limited to the desired locality, are preferable.

Astringents, such as tannin and alum, do not work favorably enough to justify their recommendation in most cases.

Chloride of iron is among the most reliable antiseptic and astringent agents. Small doses in long intervals are quite useless. Moderate doses frequently repeated have a satisfactory general and local effect. A child a year old must take at least four grammes daily; a child of three or four years from eight to fifteen grammes; the same or a larger dose for an adult. The chloride is to be mixed with water and glycerine in various proportions, so that a dose is taken every hour, every half-hour, every ten minutes. Thus other local applications to the throat become mostly superfluous. Potassium or sodium chlorate, from one to four grammes daily, may be added to advantage. This is essentially also the treatment recommended by Dr. Billington in the paper alluded to. It was not necessary on his part, when he referred to my own researches on diphtheria and its treatment, to add that while he coincided with my views in almost every particular, he was not my "follower," except in the order of publications.[1] It is superfluous for me to say that I know him to have arrived at his results independently, and that it was and is a gratification to me to be approved by a painstaking and thinking practitioner and writer.

Among the latest panaceas of diphtheria is, besides internal remedies, a local one in the shape of the galvano-cautery. Dr. Bloebaum, of Coblenz, Germany, has constructed a small galvano-cautery, more or less portable, which is to destroy the first diphtheritic deposit, and thus cure the case. In order to succeed in doing that, it is to be agreed between the patient and his diphtheria that the latter must be within easy reach.

Membranes must not be torn off, and not removed unless they are nearly detached. Caustics are contra-indicated, except where their application can be limited to the diseased surface. No healthy part must be injured. Swelled lymph-glands require ice, iodine, iodoform, mercury, poultices, incision, carbolic acid, according to circumstances, and, at all events, frequent and careful disinfection of the mucous membrane, from which their irritation originates.[2] Diphtheria of the nose is apt to be fatal, unless careful treatment is commenced at once. It consists in persistent disinfection of the nares and pharynx by means of injections. The tendency to sepsis forbids a long intermission of them. They must be continued day and night for one or several days, no matter whether the glandular swelling is considerable or not; for I may here add that there are cases of intense sepsis in which the poison enters the system not by the lymph-ducts, but by the open blood-vessels of the nasal mucous membrane. In these cases there need be no swelling of lymph-bodies.

Some words about nasal injections.

First. A trained nurse, lady-like and conscientious, reported she had made them every hour for five days, and the doctor and herself believed it. I made one, and she admitted she had never succeeded. She never held the syringe horizontally, never succeeded in reaching the other nostril or the pharynx, and nearly killed the child by want of disinfection.

Second. There were two trained nurses, and two children of, I believe, six and four years. When I saw the little four-year-old one, the other was dead. Where did he die? Where? His head between the knees of the trained nurse. They had been told Dr. Jacobi ordered nasal injections to be made every hour in such cases. Every hour the unfortunate boy was lugged out of bed, protesting and fighting, and wearing out his little strength in his battle against two trained brutes; had his head rammed between the knees of one of them comfortably seated on a chair, while the other did the rest; and thus the boy was murdered. When I heard that fearful story from the smiling lips of that person, I begged and pleaded, and showed how to do it gently. The doctor told me a week afterward that the little girl died between the knees of one of the smiling creatures, and neither of them is in the State prison! This is not the proper way of doing it. The whole procedure need not take more than half a minute for the two nostrils; the children may be raised in bed, a towel under their chins. One person holds the hands, the other sits behind and injects *gently*, in order not not to injure the ears. When a child ever complains of the ears, let the liquid be poured in from a spoon. The liquid must be warm, indifferent, such as a two-thirds of a one per cent. solution of salt-water, or as lime-water; or antiseptic, such as a one-quarter to one per cent. solution of carbolic acid, or saturated solutions of boracic acid, or a solution of one part of corrosive sublimate in 2,000 to 10,000 parts of water, with or without 10 to 50 parts of table-salt, or 60 to 300 parts of boracic acid.

When I do not desire to set the children up, I use the same solution as a spray. It can be used while the patients are on their backs or sides. It can be applied often, every hour, every twenty minutes, without harm or annoyance. Only see to it that the nozzle is large and cannot hurt the child. The same must be said of syringes. Formerly I used the hard-rubber ear-syringe, cutting the short end off. Now I use a most simple glass syringe, with vulcanized rubber mounting, which cannot possibly give pain. It is made by the apothecary of Bowery and Second Street.

The question as to the concentration or dilution of antiseptics is a very important one. Knowing that bacteria required rather strong antidotes, I, like others, was at one time of the opinion that bacteria and bacteric poisons could not be interfered with, inasmuch as antiseptics able to destroy bacteria would first destroy blood and tissues. This is fortunately a mistake. It is not the degree of concentration which tells, but the duration of administration or application. A permanent irrigation of a three per cent. solution of carbolic acid is dangerous; the desired effect can be obtained by a much weaker preparation when used frequently or constantly. In one of his careful and suggestive papers on the effect of carbolic acid on vibrating cells and leucocytes, in the *American Journal of the Medical Sciences* for January, 1881, Dr. T. Mitchell Prudden proves that a solution of one-sixteenth of one per cent. of carbolic acid prevents the emigration of white blood-corpuscles under circumstances otherwise favorable to inflammation; and another careful investigator, Koch, finds that though bacteria are not easily killed, their growth is stopped by a solution of 1 part of carbolic acid in 850, and their activity by one of 1 part in 1,200. This is all that is required in the large majority of the very worst cases; and these experimental discoveries bear out my clinical experience of the usefulness of great dilutions of carbolic acid. In regard to injections and spray, I again insist upon their frequent repetition, and have also combined with them, for years, another practice, which consists in permanent inhalation of turpentine or carbolic acid, or both. In the room of the patient water is kept boiling constantly, not on gas, if possible, because of the large amount of oxygen which it consumes; not over alcohol, if I can help it, but over the fireplace, provided the steam is prevented from escaping directly into the chimney. Every hour a tablespoonful of turpentine—preferably the crude—and

[1] Loc. cit., p. 291.

[2] Swelling of the lymph-bodies near the angle of the lower jaw means diphtheria of the posterior nares.

a teaspoonful or more of carbolic acid is poured into the boiling water, and the air of the room filled with the vapor.

Inunctions of iodide of potassium or mercury cannot be looked upon as local treatment under ordinary circumstances, for their effect is a general one. When Dr. J. L. Smith (*American Journal of the Medical Sciences*, April, 1885, p. 335) quoted me as having advised the inunction of mercurial ointment into the region of the larynx, in membranous croup, he mistook my meaning. Still, I can imagine that if iodide of potassium, or mercury, or another absorbent, could be readily and speedily introduced into the fearful adenitic and periadenitic swellings round the neck, they might be found useful. Thus far there has been no possibility of accomplishing that much until lately, for the common officinal ointments are just as many placebos, and their use acts simply as a gentle massage. Oleic acid, it is true, will penetrate the cutis easily, and carry medicines with it, but it irritates. Pure lanolin acts very much better. Years ago I found iodine in the urine three hours after the application of an ointment prepared by dissolving 1 part of iodide of potassium in water, and mixing with 2 parts of lard and 6 parts of *pure* lanolin. It has thus been traced within an hour. A syphilitic tumor of the mediastinum I have seen diminished by iodide of potassium inunctions, in lanolin, without using anything else. Thus I should recommend in future to try hydrargyrum or iodoform lanolin ointments in such septic swellings. I can also imagine that the injections of iodoform dissolved in ether will have a good effect in destroying some of the deposited poison and preventing its spreading, and I shall try them.

The local treatment of laryngeal diphtheria consists of emetics, such as zinc, copper, or turpeth mineral, when half-detached membranes are to be removed, and in tracheotomy. Let me add here at once, *in intubation*, thanks to the most modest and most deserving of all men, Dr. O'Dwyer.

The local treatment of diphtheritic paralysis requires friction, hot bathing, the faradic and galvanic currents, and sometimes the hypodermatic administration of strychnia.

Diphtheritic conjunctivitis is benefited by ice-cloths repeated every few minutes, and boric acid; cutaneous diphtheria, by local cauterization and disinfection. The application of iodoform in powder, or a ten per cent. iodoform vaseline ointment, or carbolic acid concentrated, or in glycerine or alcohol solutions, of from five to fifteen per cent., repeated frequently or less so, will often prevent the poison from spreading into the neighboring lymph-bodies and the blood.

Retention of Placenta for Twenty-two Months.—Dr. Rangé reports in the *Journal des Layes-Femmes*, January 1, 1887, the following case: A woman, thirty years of age, primipara, had a miscarriage in September, 1879, at the second or third month of pregnancy, followed by severe and repeated hemorrhages. No doctor was called in, and little is therefore known of the circumstances or causes of the accident. The hemorrhage continued for some time, gradually getting less, and ceased entirely for four months, reappearing in April, 1880. Since that date the patient suffered constantly from severe abdominal pains, with red and white discharges, and a deranged state of the bowels. Matters mended to some extent, and the patient thought she was getting well again when, in July, 1881, she was seized with labor-pains, and in two hours was delivered of a placenta in a state of putrefaction, about the size of the closed fist. She made a tedious but perfect recovery. This patient had had no marital intercourse since her miscarriage, and no doubt is therefore possible as to the reality of the placental retention having lasted twenty-two months.

ON THE SURGICAL TREATMENT OF BRAIN SUPPURATION FOLLOWING EAR DISEASE.[1]

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It not infrequently happens, during the progress of a mastoid disease, and even when the latter has been relieved by properly performed operation, that a series of symptoms develop themselves which carry despair to the heart of the aural surgeon. I refer to the brain complications which, while possible with an intact membrana tympani, are commonly associated with long-continued purulent discharges from the middle ear, with generally a mastoid involvement. In Schwartze's collection of one hundred cases of mastoid perforations there were twenty per cent. of deaths, and in only one could the fatal result be attributed to the operation. Other aurists have had a mortality nearly similar. It was my fortune to witness death occur in five cases with cerebral symptoms during my eight years' connection as aural surgeon with the New York Eye and Ear Infirmary, but with the less frequent opportunities of studying the complications that have come to me in late years, I have only once been able to make an uncertain step forward to rescue a patient doomed in this manner to destruction.

This was in 1884 when, on December 19th, a woman, thirty-nine years of age, was admitted to my ward in the New York Hospital, who gave the history that seven weeks before she had injured her right thumb, which had become painful and swollen. While the inflammation was in progress, severe headache came on, associated with a discharge from the right ear, which, however, continued but a short time, though it was followed by deafness on that side. Two weeks prior to her coming under my charge she had had the thumb incised and a quantity of pus let out. Her headaches, however, continued, and she had fever and chills, loss of appetite, and vomiting. One week after the incision was made in the thumb she complained of leg-pains, and had difficulty in walking. On admission, she was found with a temperature of 101½°; respiration, 16; pulse, 64; but no paralysis was detected on ordinary examination, though she was heavy and inclined to be stupid and lethargic.

The finger was healed, and no inflammatory action existed along the forearm, arm, or in the axilla. There was, however, œdema and tenderness over the right mastoid region, and pain was complained of over the whole right side of the head, and some was also felt along the right side of the upper spine. The membrana tympani of that side was perforated largely, and the ossicles were plainly visible. Though covered by swollen mucous membrane, no discharge was seen, and no puffing or swelling of the face existed. Urine was free from albumen and sugar.

As the indications were plain for opening the mastoid a section of the soft parts was made and the bone exposed and perforated, at first with a drill and afterward with a chisel, following the directions of Schwartze, Buck, and Hartmann, until the antrum was reached, and a small quantity of pus evacuated. The antiseptic fluid (sublimate solution, 1 to 2,000) could not, however, be syringed from the mastoid into the ear. The wound in the bone was packed loosely with iodoform gauze and an antiseptic dressing applied. As a result of this operation the temperature fell to 99° and the pulse rose to 82, and her hearing decidedly improved on that side, but she still complained greatly of general headache. This symptom persisted with increasing violence, and eight days later the pulse sank to 58, and the right eye showed, by ophthalmoscopic examination by Dr. Andrews, a choked disk. In view of her deteriorating condition, I determined to

[1] Read at the discussion on Mastoid Disease, at a meeting of the Section on Ophthalmology and Otology, New York Academy of Medicine, held March 21, 1887. Since the reading of this paper the British Medical Journal for March 19th has come to hand, and in it is a synopsis of two cases by Mr. Miller, where a low down opening of the temporal bone had relieved a cerebral abscess, but with a subsequent fatal issue from pyæmia.

practise in her hopeless condition what I then felt to be a rather heroic remedy, viz., to open the skull and try by probing the brain to find the abscess which I supposed was there. I therefore, under ether, on March 29th, enlarged with gouge and rongeur forceps the original mastoid opening upward and forward for half an inch, and deepened it until the dura mater was exposed nearly the size of my finger-nail. Cutting through the membrane I introduced several times a hypodermic needle to a depth of nearly an inch and a half, directing it along the upper part of the petrous bone and also into the cerebral lobe in this region, but nothing but a little blood was extracted. The wound was again packed with iodoform gauze and dressed as before. No good nor any harm resulted from this exploratory operation. Three days later she apparently improved, coincident with an increased discharge from the wound; this amelioration, however, was but temporary. Eleven days after this last operation she became hemiplegic on the *right* or same side as the ear trouble, with a temperature of 103°, and pulse 68, and irregular, with vomiting. Under these discouraging circumstances a further ineffectual attempt was made to relieve her. With a one-inch trephine a button of bone was removed over the left Rolanderic line, and the dura mater incised crucially, and quite a large quantity of nearly clear cerebro-spinal fluid, approximated at two ounces, let out. Six exploratory punctures were then made with an aspirator, but nothing was detected. The patient was not bettered and died the next day, comatose. An autopsy was refused.

This case led me naturally to a further consideration of the subject and to repeated dissections, and I had, with the recent experience gained from an unsuccessful attempt at removing a sarcoma from the brain,[1] arrived at the conclusion (and was helped in this by the advice of my friend, Dr. Seguin) that a bolder explorative operation and search for a brain abscess was permissible, and I waited only another opportunity to put into practice my surgical convictions on the point when the brilliant results of Horsley[2] in the removal of cerebral tumors, and of epileptogenous brain-tissue, a procedure inaugurated by Bennett and Godlee in 1884, taught the surgical world the comparative innocuousness of largely planned openings of the cranium, and the tolerance of the brain itself to manipulative interference. Later than this, and more germane to the topic of the evening, are the results, known doubtless to you all, obtained by Barker,[3] of London, who published with Dr. Gowers, in December last, the happy result of daring brain surgery obtained by trephining for a cerebral abscess following mastoid disease. This latter bone had been early opened, relieved of the purulent collection, and washed out with antiseptic lotions through the auditory canal. Seven days later, rigors persisting, and the patient's lethargy and vomiting continuing with intense optic neuritis, Dr. Gowers was led to the conviction of the existence of a brain abscess, and asked Mr. Barker to relieve the patient, which was effected by opening the cranium. The temporo-sphenoidal fissure was exposed as a landmark, when an aspirator needle, thrust inward, forward, and downward, *i.e.*, toward the petrous portion of the temporal bone, gave evidence of pus. This track was enlarged, and nearly one ounce of matter was evacuated and drainage accomplished by a rubber tube. Two weeks after the operation the tube was removed and the patient allowed to get out of bed. Complete recovery took place.

Immediately following this interesting case was another, published in the *British Medical Journal* for February 12, 1887, by Dr. Greenfield,[4] and operated on by Mr. Caird. The cerebral symptoms had existed for eleven weeks, and followed a suppurative inflammation of the left ear; the mastoid, however, was not involved. The signs of pressure were more marked than in the preceding case. There were present ptosis of the left eye and dilatation of the same pupil, but no paralysis of the limbs, tongue, or face. The left optic papilla was greatly swollen, cloudy, and gray, with blurred edges. The right was slightly ill-defined at the apparent lower margin, but elsewhere was clear. These symptoms led Dr. Greenfield to believe that the abscess was in the temporo-sphenoidal lobe, and that it extended forward and inward, so as to occupy a position near the front and toward the inner aspect of the lobe. The trephine was placed one inch above the zygoma, and one and one-fourth inch behind the external angular process, and on removing the button of bone the dura mater bulged forward and was pulseless. On reflecting the membrane, and plunging a Graefe's knife half an inch inward, matter was struck, and about two ounces of pus thus escaped. Subsequently it was found that fluids injected in the ear came out through the wound. The patient fully recovered within a month. Another successful case has just been reported by Macewen, of Glasgow,[1] but no details have been published.

It was at first thought that English surgery was to be credited with this marked advance, but early in 1886 a case was reported by Truckenbrod[2] which had been successfully operated on by Schede, of Hamburg. His case was one of left-sided chronic purulent ear disease in which febrile symptoms, pain in the head, and chills developing, the mastoid was opened with evacuation of pus and temporary improvement of the patient, but on recurrence of his symptoms, with augmentation of nerve symptoms, such as paresis, aphasia, and right facial paralysis, the diagnosis of brain abscess was arrived at, and the skin opening of the mastoid was enlarged upward, when a tiny bone fistula, discharging pus, was found just above and behind the external auditory canal. This was enlarged until the dura was exposed, when more pus escaped, but insufficient to account for the symptoms. Exploratory puncture through the dura not detecting the site of the abscess, the thin layer of the temporal bone was chiselled through five centimetres downward and backward, the dura mater then split, and an abscess of the size of a small orange revealed and evacuated. Its cavity was washed out with 1 to 1,000 sublimate solution and drained. Immediate relief followed, but twice during the progress toward recovery it became necessary to puncture and drain the abscess-cavity anew. In eighteen weeks the patient was discharged. Some interesting nerve conditions followed the recovery, but do not concern the present question.

This case of Schede's, while perhaps more correctly surgical, as will shortly be further shown, is hardly to be classed in brilliancy with the operation of Barker and Caird in respect to the correct previous localization of the purulent depôt, and is more closely allied to one reported by Ogston,[3] who in 1876 trephined the skull for a cerebral abscess following middle-ear disease with caries of the mastoid and the adjacent parietal bone. By this operation nine ounces of pus were evacuated from between the dura mater and the diseased bone. The brain was not opened. A communication existed between the abscess and the auditory canal. Recovery was perfect, save the atrophy of the optic nerve, and the permanently dilated pupil on the side of the ear and abscess troub'e.

A nearer approach to the ideal operation, as far as technique is concerned, is the one briefly sketched at a recent meeting of the Medical Society of London by Mr. James Black,[4] who, in a patient with cerebral symptoms from aural disease, after failure had resulted from drilling the mastoid, trephined the skull an inch and a quarter above and behind the external auditory meatus, and explored the brain for the abscess. A second exploration

[1] N. Y. Med. Jour., March 5, 1887.
[2] Br. Med. Jour., October 9, 1886.
[3] On a Case of Abscess in the Temporo-sphenoidal Lobe of the Brain, due to Otitis Media, successfully Treated by Trephining and Drainage, by W. R. Gowers and Arthur E. Barker, Br. Med. Jour., December 11, 1886.
[4] Remarks on a Case of Cerebral Abscess with Otitis, successfully Treated by Operation. By W. S. Greenfield, M.D., F.R.C.P.

[1] Br. Med. Jour., February 19, 1887.
[2] Operativ geheilter Hirnabscess nach Otorrhoe, Zeitschr. f. Ohrenheilk., xv., S. 186.
[3] Br. Med. Jour., December 2, 1876.
[4] Br. Med. Jour., March 5, 1887.

was subsequently made through the same opening with a trocar and cannula, but no pus was found. In spite of severe constitutional symptoms, the wound healed well, with the exception of a small sinus, and the patient ultimately made a good recovery. Schondorff's case,[1] which is quoted by Greenfield, had less interest in it. It was as follows: A man had acute purulent inflammation of the middle ear, which was accompanied by mastoid inflammation, abscess, and fistulous discharge. A year later, brain symptoms showed themselves, the mastoid was opened, and some pus found. The next day a fistula was detected in the bone cavity, and enlarged, when about sixty grammes of pus was let out. This fistulous bony track was subsequently cut open, and found to run across the lateral sinus, which was thus exposed nearly to the median line posteriorly, and was thought to be due to phlebitis. The patient recovered, no incision being made into the abscess, it only being drained and washed out through the enlarged bony fistula.

A short research through the authorities on aural surgery will show that the intra-cranial complications occurring with septic inflammations of the ear, whether bony or otherwise, are purulent meningitis, cerebral abscess, phlebitic thrombosis, and pyæmia, the two former being the more common, and the least readily recognized. It is not my intention to go into the subject of the diagnosis of these affections, and particularly that of cerebral abscess. It is well known that the regions in which such purulent collections are most commonly found are those which afford the fewest and most unreliable symptoms for localization. Hence, my endeavor has been rather to direct attention to certain facts, not hitherto clearly made known, that may contribute clinically a little more certainty to a previous hesitating treatment. A somewhat cursory examination of a series of cases of cerebral abscess, from the time of Meyer's monograph on this subject to the present period, has shown me, not only that nearly one-fourth[2] of all such abscesses are of ear origin, but, what is of more importance, that out of 44 cases,[3] in which only two double abscesses were met with, 24 were found in the temporo-sphenoidal lobe, 15 cases in the cerebellum, 2 in the frontal lobe, 1 in the posterior cerebral lobe, 1 in the pons, and 1 in the corpora quadrigemina. This hardly corroborates the statement made in the recently received brief report of the discussion on cerebral abscess in Glasgow, by Mr. Barker, that cerebral abscesses were three times more frequent than cerebellar ones. The situation of an abscess also depends, to some extent, and probably more so than we can always appreciate, upon the route by which the inflammation extends from the ear-passages, the line of extension being usually along the anastomosing veins and lymphatics, or nerves,[4] and more often from continuity from existing bone disease, or from a thin or non-present tegmen, or in children chiefly through the incomplete petro-squamal suture; the condition of long-tarrying pus, however, being by far the most important of all the factors in the self-infection. I found in my collection of 44 cases that the 24 abscesses of the temporo-sphenoidal lobe were associated with caries on the anterior wall of the petrous bone fourteen times, with mastoid caries six times, and with anterior phlebitis once. Its situation was not stated in the three remaining autopsies. In the 15 cerebellar abscesses, it was noted that the infection progressed from caries of the posterior petrosal surface six times, from internal ear caries three times, from mastoid disease twice, and by means of the aqueduct veins once, by the facial nerve twice, and once it was not stated. This sustains measurably Gull's modification of Toynbee's law as to the influence of the locality of the lesion. The important surgical fact, however, comes out strongly, that a majority of the purulent depôts in the brain from ear disease are encountered in the temporo-sphenoidal lobe, and that after this the most affected locality is the cerebellum. It should be as decidedly kept in mind that both the regions involved are fortunately of less value to life, and can better permit surgical interference than almost any other portion of the brain. It is to the fact of their slight motor importance that our power of localizing tumors and abscesses in these regions is so poor, and this consideration leads directly to the remark that the earliest decided evidences of brain-pressure in the diseases under question should be acted upon as soon as detected, since their development presupposes an already large accumulation of pus. It is for this reason, therefore, that I would advocate surgical interference with the brain as soon as a mastoid operation has shown us that the symptoms have not been satisfactorily relieved by this operation. Recall here, in this connection, the statement that one-fifth of the cases of cerebral abscess die unrelieved by the mastoid operation, and its weight will be felt. There is a peculiarity which others beside myself have observed: it is, that after both a successful and unsuccessful mastoid perforation (*i.e.*, as regards reaching pus) there is often a decided improvement in the symptoms, followed after a day or two by a progressive deterioration; and, further, it has been occasionally noticed that through the mastoid opening an amount of pus has been discharged far beyond what the cells could contain, and this in several instances has continued for a day or two. Taking such conditions, and those that have been given, with Ogston's, Schede's, and Schondorff's cases, it is a fair inference that either the cerebral abscess itself has been relieved by the mastoid operation, or, what is more likely, that an extra-dural collection of matter has been drained by the mastoid opening. I cannot but help thinking, when considering these instances, that even in this direction surgery can do more than it has hitherto done, and that by a cranial operation the dura could easily and safely be lifted up to a point corresponding to the roof of the tympanic cavity. This I have done experimentally on the cadaver without difficulty. In truth—and I hesitate lest the charge of rashness be thrown at me—I cannot see, anatomically or surgically, any adverse reasons, in a suppurative meningitis of the middle fossa, of aural origin, why an early outlet should not be provided for its infectious products by opening the dura and draining the fossa. Reflection will show a surgical analogy to plainly exist between the petrous bone and the appendix vermiformis. As in the latter, one may have a general peritonitis or a localized abscess bounded by matted intestines, or one may have, better yet, a connective-tissue abscess, all depending mainly on the rapidity of the ulcerating process; so in the petrous bone, from reasons more varied, perhaps, than in the appendix, one can expect, first, an extra-dural inflammation, which, according to my idea, can and should be relieved, or an attempt made to do so; second, an acute suppurative meningitis, due to the direct perforation of the dura or to the infection along vessel-channels; and third, the cerebral or cerebellar abscess, often of pial origin and beginning in a deep convolution, and secondarily involving the cerebral substance. This may be fanciful to some, but it will serve, perhaps, to impress the point of my remarks more deeply.

The outcome of all these observations is in the advice that, in the case of ear disease presenting cerebral symptoms, without definite possible localization, the mastoid cells should be opened at the point where it curves into the meatus (according to Dr. Buck's suggestion). If pus is discovered and satisfactorily evacuated, delay can be resorted to, in the hope that this relief may be sufficient. If it is shown that the improvement is nil, or only temporary,[1] the procedure of Schede accords most with my

[1] Arch. f. klin. Chirurg., Bd. xxxi., S. 316, 1885.

[2] Barker says (Br. Med. Jour., February 19, 1887) more than thirty per cent. of the cases of cerebral abscess are due to ear disease. He also states that cerebral abscesses are three times more frequent than cerebellar abscesses.

[3] Which I have obtained from the records of Archiv. f. Ohrenheilkunde, vols. 1 to 23.

[4] To the cerebellum along the seventh nerve, as has been reported by Rotholz and Hartmann, Archives Otology, Bd. xv., 559.

[1] And keeping in mind that the duration of cerebral abscesses is not always long, as it has been shown by Meyer that in 34 cases 13 died in one week, 7 in two weeks, 4 in three weeks, 8 in five weeks, and the other 2 within nine weeks.

own views, viz., to enlarge the mastoid opening upward and inward until the dura is exposed over a space of half an inch, when, if no oozing of pus shows an extra-dural abscess, the test-point of the exploration is to be made by carrying a director, or the flat end of a rather large probe, along the anterior surface of the petrous bone for a distance of nearly two inches, which will be not more than an inch and a quarter beyond the inner surface of the skull. Trials on the cadaver show this to be easily effected, and no reason leads me to believe it to be hazardous in the living patient;[1] and its importance will be appreciated in recalling that two-thirds of all the temporo-sphenoidal cerebral abscesses are associated with recognizable disease of this portion of the bone.[2] Should such a carious spot be thus detected, the exploration itself may possibly bring about the immediate emptying of the cerebral abscess, or, if it does not, it renders more certain the next procedure, which is to open up the region above the external auditory canal by a trephine of good size, the centre of which should be applied about an inch and a half above this landmark, or the exploratory opening of the skull can be enlarged upward by a chisel or double-gouge forceps, until a decidedly large opening is made. A large opening, I may remark, not only adds nothing to the risk of the operation, but also allows the ready control of the possible hemorrhage from the middle meningeal artery, here quite large, and which can be easily caught up by a forceps, or tied after division of the dura, or if channelled in the bone can be plugged with a sharpened match or by crushing the diploë with the jaws of a forceps. The bulging of the dura mater into the skull opening, and the absence of its usual pulsation, will be strong evidences of the correctness of the diagnosis. The use of a hypodermic needle can be now resorted to, if wished, without opening the dura, though the examination of the brain is rendered more satisfactory, by its changes in color, etc., by turning a flap[3] of this membrane upward (which direction is better on account of the possibility of the use of a drainage-tube, and should, therefore, be borne in mind and acted upon, except in those cases when in the vicinity of a sinus, such as the lateral, when the attached base of the dural flap should always be toward the venous trunk). For such explorations I prefer, and have used, rather large and long hypodermic needles, blunted at their ends, by which vessel-injury is avoided. They should be carried at first certainly toward the petrous bone, then forward, and subsequently backward. Should an abscess of large size be encountered, and in which the lowness of the cranial opening here advised should not answer for thorough drainage, as, however, it is believed it will, better than with a higher opening, the question of a second cranial counter-opening should be taken into serious consideration, particularly if no motor-tract would be involved in accomplishing the same. The need of such a counter-opening was amply demonstrated by Dr. H. D. Noyes in his case of a gravitating cerebral abscess, and it has been corroborated in my own hospital service, and its good effects shown in similar recent cases by Fluhrer, Powers, and others.

When symptoms are present by which the probable site of the purulent collection can be located, whether in the temporo-sphenoidal lobe or in the cerebellum, the surgeon will be guarded largely by the neurologist. In Barker's case, with such help, the skull opening was made an inch and a quarter behind the centre of the cartilaginous meatus of the ear, on a line perpendicular to Reid's base-line, which is a line running from the inferior border of the orbit through the auditory opening.

If symptoms should point toward a cerebellar abscess, by the absence of auditory bone conduction or by titubation or other distinctive symptoms, or should, in an extreme case, and warranted by the necessary mortality of the disease, a cerebral abscess be excluded, a further exploration beneath the tentorium be decided on, I can state, with some positiveness, that the cerebellar region is not inaccessible to surgical attack. I have at this time no experience of my own, or even of others, to bring on this subject save that attained in the dead-house. But quite a number of rehearsals have shown me that the cerebellum can be readily reached by cutting an oval flap of the scalp from above downward, and separating the muscles from the superior curved line of the occipital bone—in doing which probably the occipital artery and nerve will be wounded, and the former require to be cared for by ligature. The skull in this region is quite thin, and after exposure can be easily opened and the dural flap turned upward so as to keep its base toward the lateral sinus,[1] the lower edge of which is clearly defined externally, if encroached upon, as a transverse cord-like line. With a moderate exposure accomplished in this way, and with the use of spatula to lift it up slightly, the cerebellum can, if necessary, be viewed, with an electric light, nearly to the foramen magnum.

A guide in operating on the cerebellum has been suggested by Mr. Barker, which is that, before proceeding to open the skull, the mastoid wound of the soft parts should be carried back far enough to see the opening of the mastoid vein, as he believed that if inflammation existed in the posterior aspect of the petrous bone it could hardly reach the cerebellum without forming a layer of pus under the dura mater of the lateral sinus. If this is so, pus will escape by the mastoid foramen, if the latter be exposed. This point should therefore be kept in mind.

Let me say, in concluding, that the great gravity of the affection to which I have so imperfectly asked your attention has justified me, I hope, not only in occupying so much of the time of the Section, but also in presenting to your thoughtful consideration procedures which, while bold and novel in sound, are based upon the rapid but real development of scientific brain-surgery.

THE GONOCOCCUS IN GONORRHŒAL ARTHRITIS.—Dr. P. V. Smirnoff has examined the sero-purulent fluid aspirated from the inflamed knee-joint of a patient, aged twenty-eight, in whom arthritis had developed about a month after his contracting gonorrhœa. Numerous groups of Neisser's microbes were found within the pus-cells. Hence the author comes to the same conclusion as Petrone, Kemmerer, and M. I. Afanasieff—that is, that the articular inflammation is caused by the gonococci entering the blood

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[1] The above conclusions have been confirmed in the Lancet of March 12th, and the Brit. Med. Jour. of March 19th, received since the reading of the paper, by the report of Dr. McBride and Mr. Miller of two cases of cerebral abscess relieved in almost precisely similar manner, the patients, however, succumbing from pyæmia. In the Lancet for March 26th will be found the details of Macewen's successful case of cerebral abscess alluded to in the text. The opportunity of proof-correcting fortunately enables me to further complete this subject.

[2] Barker, in the brief synopsis of his paper at the Glasgow Medico-Chirurgical Society (Brit. Med. Journal, February 19, 1887), says that nine-tenths of the temporo-sphenoidal abscesses lay within a circle three-fourths of an inch in diameter, the centre of which was an inch and a half behind, and the same above, the centre of the meatus.

[3] The resort to a flap instead of an ordinary plain or crucial incision is to meet the contingency of failure to detect an abscess. If such is recognized, the base may be split or the flap removed, as wished, to permit the necessary drainage.

[1] Too much stress is, I think, laid on wounds of the longitudinal and lateral sinus. I have in four instances met with a wound of the longitudinal sinus with fracture, and once a similar wound of the lateral sinus. In all, the hemorrhage was promptly controlled by a tampon, without detriment to the patient. I have wounded the lateral sinus in a mastoid operation, and, without any difficulty, checked the hemorrhage, and the patient recovered. The sinus in the living are much broader than is supposed—the longitudinal is often one inch broad, and similarly the lateral. This can be proved by injecting them in the cadaver. I have, in two cases, removed the bone over the longitudinal sinus without causing any marked hemorrhage, and have exposed the whole width of the lateral sinus in a mastoid operation without any bleeding or evil results. Schondorff, Lucal, and Knapp have had a similar experience. More good could be accomplished in caries of the petrous bone were aural surgeons not rendered unduly timid by fear of damage to the sinus, which is, however, generally out of their field of operation, and also from their dread of exposing the dura mater. In the many instances where a fistulous track, leading to carious bone, exists through the mastoid, which is difficult to follow, the injection of the same with some innocuous staining fluid, such as iodine or one of the aniline dyes, might enable a surgeon, with a wide external opening, and the use of fine scoops, etc., to clear out the carious patch, and to open squarely into the tympanum, as effectually as is now done elsewhere in bone abscesses contiguous to joints. The color of the dura mater is sufficiently pronounced to give warning against proceeding farther in any given direction, when it presents itself.

A NOVEL SYSTEM OF OPERATING FOR THE CORRECTION OF THE DEFLECTED SEPTUM BY MEANS OF AN ELECTRIC MOTOR, NASAL DRILLS, AND AN ORIGINAL SPRAY-PRODUCING DEVICE, WITH ILLUSTRATIVE CASES.[1]

By WILLIAM CHAPMAN JARVIS, M.D.,

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Despite the numerous methods which have been advanced by laryngologists for the correction of malformed or displaced septa, no single procedure or device has evidently been invented which can justly claim the right of universal applicability for the successful treatment of the conditions met with in this deformity. Rather than view this as an indication of inefficiency or irresolution, I would, on the contrary, profiting from the common experience of the past, interpret the formidable array of instruments as a commendable effort to successfully cope with the various contingencies which may be met with in the treatment of the deflected septum. It is even difficult to imagine a single instrument possessing the combined property of cutting with facility and precision the hardest bone or softest membrane. This, nevertheless, would be required of an instrument designed for the successful treatment of deflected septa, composed, as they may be, of hypertrophied mucous membrane, dense, elastic cartilage, or compact bone.

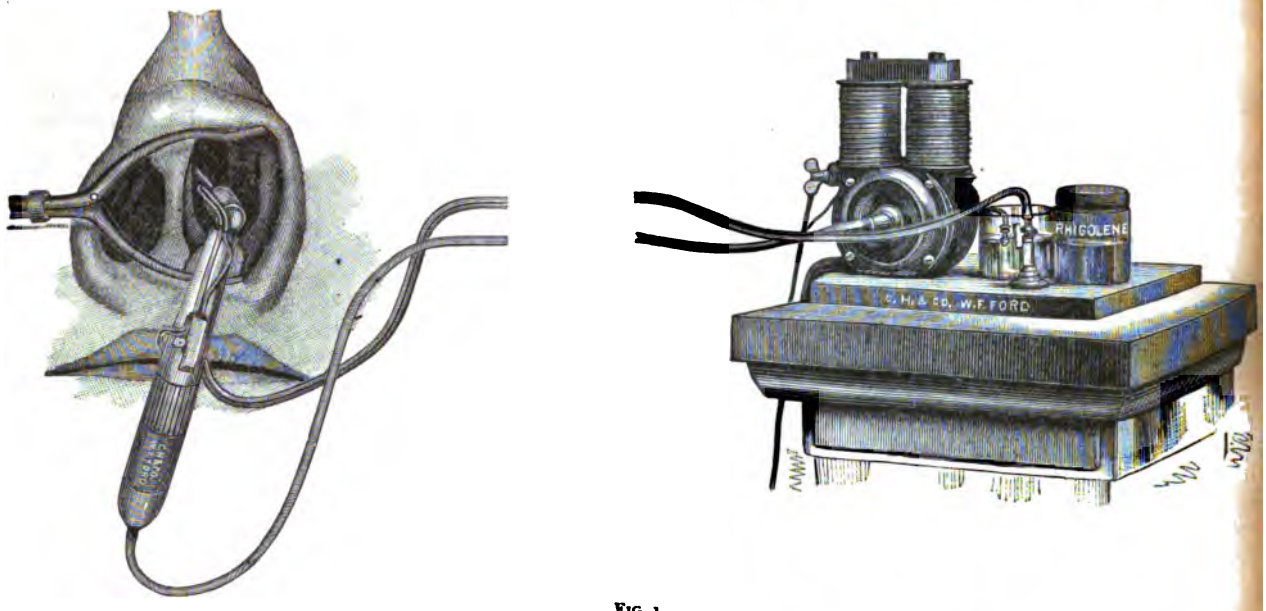

Fig. 1.

Several devices have been already brought forward by me for curing the deflected septum, which, judging from their liberal acceptance in print and practice, have more than survived the usual surprise provoked by the presentation of therapeutic novelties. I do not desire this addition to my septum armamentarium, namely, the electric motor and novel system of drilling, to be interpreted as an expression of dissatisfaction with earlier procedures, but rather as an intention to make these operations more effective. Indeed, I rarely if ever complete an operation upon the septum by means of the electric drill alone, for the reason that my delicate punches, cartilage-scissors, and bone-forceps afford valuable assistance for the removal of adherent tissue débris, in the form of shreds of mucous membrane or cartilaginous and osseous asperities.

A sufficient experience with the common treadle surgical engine, and particularly with an improved form of this apparatus, invented and used by me during an extended period for intra-nasal operations, has convinced me that the natural dread occasioned by the sight of the cumbersome and rapidly revolving noisy machinery constitutes a menace to the usefulness of the nasal drill. This sometimes serious objection, though mostly of a psychical nature, is effectively overcome by the employment of the electric motor, concealed in its narrow shell suspended in mid-air, but few patients possessing an idea of the great power conveyed by the quiet, mysterious movements of this apparently insignificant mechanism.

My earliest results with the electric motor, in operations upon the septum, were obtained by means of a very ingenious dental instrument, devised by the late Dr. Robert Arthur, of Baltimore, and for the use of which I am indebted to my friend Dr. George Arthur, U. S. N. This little instrument, used by me not quite two years ago, was constructed to combine the greatest amount of working power with the smallest bulk, inasmuch as the drills and magnet were held in the hand, after the manner of a pen-handle, the mandril and drill-chuck being a direct extension of the armature. The efficiency of this motor is dependent upon the great number of its revolutions, that is, the acquired momentum, and it satisfactorily serves the purpose for which it was intended, namely, drilling the teeth. Although I succeeded in cutting away the dense structures entering into the formation of extensive deviations of the septum, the frequent retardation of the drill's revolutions when unusual pressure was exercised, gave rise to inconvenient delay in acquiring fresh momentum. For this reason I was compelled to abandon the employment of Arthur's hand-motor and turn to bulky but more powerful devices of the kind to accomplish my purpose. I nevertheless believe that the application of direct power, in accordance with the principle of Arthur's motor or Robert's electric osteotome, is the most rational, inasmuch as the loss of power through friction is reduced to a minimum.

The weight of electric motors possessing great rotatory inertia renders the employment of a cable and independent hand-piece necessary. The first motor of this pattern, seen by me several years ago, was one known as the Hussey motor. Being intended for dental purposes, it was operated by means of a flexible cable, the weight of the instrument being supported by a cord attached to the ceiling. I experimented with one of Hussey's larger motors, but was disappointed in the instrument. Dr. Seiler drew my attention to the Griscom motor several years ago, and I embraced an opportunity to study its action for an extended period, but was not perfectly sat-

[1] Presented at the New York Academy of Medicine (Laryngological Section), March 23, 1887.

lsfied with the instrument. To Dr. Carl Seiler, I believe, is due the credit of first calling the attention of the medical profession to the utility of the electric motor in intranasal surgery.

The experience just described led me to discover and utilize the powerful but compact C and C electric motor. Inasmuch as this instrument has proved in my hands the desideratum sought for, I shall give it exclusive attention, only referring to other motors for purposes of comparison. This electric motor is shown in Fig. 1, together with the accessory operating appliances. The axle-shaft can be discerned projecting from the centre of the motor-box. By simply unscrewing the face-plate the component parts of the motor can be readily reached and examined. The armature, of the ring type, is wound continuously, wire of trapezoidal section being used. The commutator brushes are so arranged that no injury can arise from reversing the motion of the armature. The commutator segments, seventeen in number, are placed in a circular manner, being separated by an interval of only one-sixteenth of an inch. This close arrangement of the segments secures uninterrupted and great power without sacrificing speed. Hence there is absolutely no dead-point, a prevalent objection with electric motors, and the common annoyance of laboriously adjusting the armature at intervals during an operation is, by this device, relegated to the inconveniences of the past.

The counter-electromotive force generated by the motor running at 1,800 turns a minute, with an 18-ampère current in the field, is 5 volts. The revolutions can be carried as high as 2,000 to the minute. Its extreme capacity equals ½-horse power. The dimensions of the instrument are 7½ × 5 × 3 inches, and weight 12 pounds.

A single quantity-cell supplies sufficient electromotive force for any ordinary nasal operation; two of these cells furnish an excess of power, even in operations including the densest portion of the vomer. To facilitate the attachment of the flexible shaft, I have had constructed a metallic sleeve which slips over the journal-box of the motor. Within this sleeve is an angular rod, soldered to the flexible cable, which slips in a groove cut into the centre of the axle of the armature. The free movement of this rod within the groove favors the flexion of the cable, and permits the shafting to be quickly attached or withdrawn. The electric motor can be used either attached to a convenient table or suspended by wires from the ceiling.

The wires running from the battery are interrupted before reaching the motor and arranged upon a footboard. The convenient cut-off thus formed is simply composed of a sheet of spring brass, which the pressure of the operator's foot brings in contact with a button, through which the electric current is conducted to the motor. This device, I have been recently informed, has been likewise invented by Mr. Griscom. Although it is possible by this arrangement to instantly cut off the current, if desired, the sudden interruption of the electric flow is not really required, inasmuch as the easy withdrawal of the small nasal drills, even while running at full speed, is a very simple procedure.

After experimenting with several kinds of batteries, I have finally settled upon a modification of Bunsen's cells, a plunge and a gravity battery, as the most convenient.

My improved plunge battery is so arranged that a succession of cells can be automatically thrown into the circuit by simply raising the lid of the box which supports the elements, sliding it along a rod, which serves as a hinge, and allowing the cover to descend, when the plates dip into the fluid, bringing themselves by their subsergence into connection with the preceding cell. By reversing this procedure the plates are removed from the cells, being finally received into drip-cups, where they remain until used again.

The automatic connection of several cells by this arrangement obviously facilitates prompt action, and saves time, trouble, and complications likely to occur in the adjustment of key-boards and switches. If desired this battery can, by a slight change in the connections, be converted from a series of cells into one giving the effects of a single cell, and therefore appropriate for running low-tension motors. By another arrangement I am enabled to utilize the current from a stationary gravity galvano-cautery battery.

The employment of small nasal drills, already referred to, I desire to lay particular stress upon, as constituting a desirable digression from the routine course heretofore pursued, of resorting to large and cumbersome devices of the kind in operations upon the nose. To facilitate the practice of keeping the parts operated upon constantly in view, the dimensions of the drill must necessarily be made small. When large drills are employed, the ingenious shielded multiple knife of Dr. Goodwillie, for example, so effectively employed by him, a view of the field of operation is rendered difficult or impossible, and the operator is compelled to rely upon his acquired *tactus eruditus*, to the exclusion of his sense of sight.

The long practice required to attain the necessary tactile proficiency to operate with precision, though blind to the exact behavoir of the drill, it seems to me, must seriously interfere with the extensive adoption of large nasal drills in general practice. Furthermore, surgeons will naturally hesitate to permit keen-edged cutting instruments to rapidly revolve out of sight in close contiguity to the brain, beneath the frail plate of the ethmoid.

FIG. 2.

The extreme narrowness of the superior meatus makes it impossible to satisfactorily employ shielded drills in this region.

Although keeping for convenience a number of nasal drills of different shapes and dimensions, I shall largely confine myself to the description of two of these, namely, my rasp drill and nasal plane. The rasp drill (Fig. 3) is

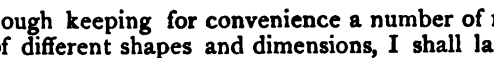

FIG. 3.

virtually a hollow file, the teeth of which have been made to project, in the form of diminutive knife-points, for the distance of one-sixteenth of an inch above the circumference of the tube. These pyramidal teeth are cut at intervals of one-eighth of an inch along the circumference of the steel tube, and their relation to each other is so adjusted that a simple rotation of the instrument produces an incision resembling that made by the cut of a continuous knife-edge.

A vent-hole, cut at the distance of an inch from the tip of the drill, permits the detritus to escape and thus prevents clogging of the steel teeth, an objection met with in many cutting devices of the kind, and at the same time frees the parts from the tissue débris which is apt to accumulate and obscure the field of operation. The extremity of the drill may be capped by a crown-knife, to prevent the eroded tissues from escaping into the nostril, and at the same time furnish an effective direct drill. These little tubular drills are capable of cutting through the densest cartilaginous or osseous structures found in the nostril, with great rapidity and perfect precision. Several forms of these nasal drills are constructed, the difference depending upon the length of the teeth.[1]

In the tubular scissors or nasal plane (Fig. 2) I have

[1] An ingenious application of the trephine, shown to me by Dr. H. Curtis, and employed by him in conjunction with an electric motor, deserves especial mention. The removal, by this small drill, of the mucous membrane over the deflected septum I do not deem an objection to its use in cases where the vomer is the seat of the deflection, since the preservation of the pituitary membrane to facilitate rapid healing at this remote point, can hardly compensate for the time and labor required to attain the object. I shall therefore promptly add this useful instrument to my operative armamentarium.

utilized a cutting device which has been already employed in other parts of the body in various forms and for different purposes. It consists of a small cylinder within which rotates a delicate tube, the end of which can be discerned through the fenestra as shown in the figure. The inner tube, it will be observed, is set with a row of fine teeth. These teeth, if deemed desirable, can be dispensed with

A useful feature of these drills will be recognized in the property they possess of removing bone and cartilage of the deflected septum without injury to the overlying mucous membrane. It is obvious that the preservation of the pituitary membrane in its entirety and integrity affords protection to the wound, and hastens the restoration of the injured tissues to their proper functions. It will often be found convenient to separate the mucous membrane and temporarily secure it to the roof of the nostril by means of cotton pledgets before cutting away the subjacent bone or cartilage.

The hand-piece employed by me (Fig. 1) as a drill-holder, invented by Mr. Weber, has the great advantage of clutching the drills after the manner of a powerful chuck. A right-angled adjustable gearing device can be made by means of a sleeve to slip over the top of the hand-piece. The right angle will be found useful for keeping the drill's point constantly in view while operating in the deeper portions of the nasal cavity. It is larger and more powerfully constructed than those usually employed by dentists. A useful addition to the hand-piece will be observed in the illustration (Fig. 1) in the shape of an adjustable spray-producing device, invented by me to facilitate the practice of keeping the drill in sight. It accomplishes this result by showering the wounded tissues with cleansing fluids, or by means of the air-douche alone, while the drill is in full action. The force of the compressed air, charged with moisture, impinges upon the cut and bleeding tissues, whipping the blood-clots far beyond the field of operation. In obtaining this result I have found it necessary to branch off from the usual methods adopted for projecting sprays, on account of the obstruction that would be ordered by the fluid receptacle. The change consists in an extraordinary lengthening of the fluid conduit. This was accomplished by means of a fine rubber tubing, two or three feet in length, beginning in the spray tube and ending in the fluid receptacle. The air and fluid tubes are joined together for almost their entire length. An adjustable cut-off slipping over the head of the hand-piece enables the operator to regulate the spray at pleasure. The spray-tube proper is attached to a ring which revolves around the drum of the right angle. This arrangement renders it possible to direct the spray in any desired location about the drill. I employ the same device to produce and keep up rhigolene or cocaine anæsthesia.

I shall conclude with a brief description of two illustrative cases, selected from a number of the kind, as good examples of the results obtained by the employment of the electric motor and drills. The first case, a broker's clerk, aged twenty, referred to me by a patient upon whom I had successfully operated, consulted me in October, 1885. The patient proved to be an habitual mouth-breather, and did not remember ever having breathed freely through the nostrils. He was often deprived of needed rest by being awakened during the night with a parched throat. The accumulation of thickened mucus in his nostrils was a source of constant annoyance. He also complained of tinnitus aurium.

Examination.—An inspection of the anterior nares showed pronounced distortion of the septum in the shape of an extensive general deflection of the triangular cartilage to the left, also a localized deviation of the columna to the right, as shown in Fig. 4, taken from a life-sketch. The displaced cartilage pressed firmly against the inferior turbinated tissues in the left nostril, producing complete occlusion on this side.

The right nostril, though only partially obstructed by a localized deviation of the septum, associated with an inferior turbinated hypertrophy, possessed very little respiratory value. Without entering into the details recorded in my case-book, I will simply state that the careful employment of the electric motor and drills, in conjunction with my stellate punch, cartilage, and bone-trimming forceps, resulted in the satisfactory correction of the deformity, the complete restoration of nasal respiration, and normal nasal drainage, and the consequent disappearance of all the annoying symptoms.

FIG. 4.

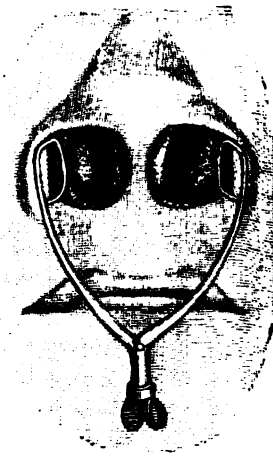

FIG. 5.

Fig. 5, drawn from a life sketch, taken five months subsequent to the operation, shows the appearance of the parts after complete healing had occurred.

The next case I shall present is that of a druggist, aged twenty-seven, who consulted me February 17, 1887, in search of relief from a difficulty in breathing. The left nostril was permanently stenosed, and the right one, though partially free, would become periodically obstructed, and was a source of constant annoyance.

Examination.—Anterior rhinoscopic inspection demonstrated the existence of an extensive osseo-cartilaginous deflection of the septum to the left, extending as far back as the middle of the vomer. The patient did not manifest the slightest dread in submitting to an operation in which the electric drills were employed. The osseous and cartilaginous tissue was first cut away with the rasp drill, and subsequently smoothed down by means of the revolving nasal plane. Forty minutes were consumed in cutting a large opening from the anterior free edge of the deviated tissue, the columna, to the post-nasal opening, about the middle of the vomer. This time included intervals of rest required for spraying the parts with cocaine and noting the progress of the operation. The loss of blood was unusually scanty. One month after the operation the wounded septum had completely healed, leaving a large interspace between it and the lateral nasal wall for the entire length of the nostril. The patient stated that the great cause of his suffering, the difficulty in breathing, had entirely disappeared—nasal respiration being as perfect in the night-time as during the day.

I cannot conclude my paper without acknowledging the courtesy extended to me by Mr. W. F. Ford, while bringing my mechanical experiments to a successful issue, and I might add that any or all of the devices described by me can be obtained from Hazard & Hazard, of New York.

PROFESSOR PEAN, like Bergmann and Guyon, performs the suprapubic section for stone. Every teacher and operator I have seen in Europe discards the perineal section. Crushing small calculi and removing larger ones by the high operation seems to be almost a universal rule at the present time.—Cor. *Chicago Medical Journal.*

Progress of Medical Science.

. CREATININ IN NORMAL AND PATHOLOGICAL URINES.—In opposition to the assertion of Professor Hoffmann, Grocco finds that muscular work has a direct influence on the quantity of creatinin eliminated by the urine (*The London Medical Record*, February 15, 1887). He finds that whenever muscular work is considerably increased the quantity of creatinin eliminated is also increased. Even in the urine of babies in the first few months of life, and fed exclusively on milk, creatinin may be found, though in very small quantity. Fever in general leads to increased creatininuria. The relation between the degree of fever and the quantity of creatinin is not, however, constant. In adynamic forms, or with renal complications, the creatinin diminishes. The alimentation also influences the quantity eliminated. In forms with rapid wasting the creatininuria is more marked. Hydræmia and cachexia lead to the diminution of the creatinin, but in every case the cause and progress of the anæmia must be taken into consideration, since with an equal degree of anæmia the creatinin may be excreted in very different quantities, and in even grave anæmia there may be an increase due to the presence of fever. Jaundice does not lead, at least necessarily, to diminution of the creatinin in the urine. In heart-disease there is diminution in the last stage of cachexia; with commencing loss of compensation the creatinin may be increased. Diffuse parenchymatous and interstitial nephritis cause diminution of the creatinin. In three cases of diabetes mellitus there was slight diminution also. In nerve diseases with much muscular agitation the creatinin increases, in others with immobility it tends to diminish. Amyotrophic paralysis of spinal and peripheral origin (poliomyelitis, atrophy, and progressive muscular pseudo-hypertrophy, primitive multiple neuritis) gives a general diminution of creatinin when the muscular atrophy is sufficiently extensive; but if the atrophy takes place rapidly and tumultuously the creatinin may be increased.

THE EMPLOYMENT OF ELECTRICITY IN THE TREATMENT OF DISEASES OF THE GENITO-URINARY ORGANS.—Dr. Steavenson states that the results obtained by the treatment of the genito-urinary organs by electricity are most satisfactory. The lowest centres or points for the reflection of impulses connected with the genito-urinary apparatus are situated in the lumbar enlargement of the cord, and by placing one electrode on the spine over the lower dorsal region and the other to the affected organ the whole nervous supply of these parts can be included in the circuit. Cases of nocturnal incontinence in children, in which no reflex cause can be found, are often cured by passing a weak current through the region of the bladder. A pad, connected with the negative pole of the battery, is placed over the dorsal region of the spinal column, and a small button electrode on the perineum. By placing the negative electrode on the back a stronger current can be borne than if the button in the perineum were made negative. In cases of simple incontinence of urine, when the sphincter is not at fault, and when the affection is due to loss of power of inhibition during sleep, or to paralysis of the muscular coats of the bladder from over-distention or other causes, then one electrode may be placed over the pubes. In cases, however, where there is weakness of the sphincter, unless an electrode is placed in the urethra itself, the best place is without doubt in the perineum, as the sphincter vesicæ does not get included in the circuit when the electrode is placed over the pubes. Undue frequency of micturition is also relieved by galvanism, and when this is due to cystitis the electric current produces a healthier condition of the bladder-walls, causing an improvement in the frequency of micturition. Neuralgia of the pudic nerve is often relieved by galvanism. In the application of electricity to the bladder for atony, incontinence, or frequency of micturition, a current from two to five milliampères, applied for eight to ten minutes every day, or every other day, for about ten days, is all that is generally required. One of the most useful applications of electricity is in the treatment of stricture of the urethra by electrolysis, but the elaborate apparatus required prevents its general use. By this method a stricture can be, as it were, absorbed without any bleeding. If hæmorrhage does occur it is accidental, and usually shows that a too strong current or the wrong pole of the battery has been used. No anæsthetic is required, as the discomfort is trifling. After electrolysis has proceeded so that the electrode will pass into the bladder, it is found a fortnight later that a bougie of two sizes larger can be passed. In penile strictures it will be noticed, after treating them by electrolysis, that a few days afterward no hard, dense tissue can be felt. The author strongly advocates this method of treatment.—*The British Medical Journal.*

THE MICROBES OF SUPPURATION.—Dr. Kranzfeld has given much attention to this subject, experimenting upon animals, and also making numerous clinical observations. The conclusions at which he has arrived are as follows: 1. In the pus in cases of acute suppuration micro-organisms can always be demonstrated both by cultivation and by the direct examination of the pus. 2. The micro-organisms most commonly met with are staphylococcus pyogenes (aureus, albus, and citreus) and the streptococcus pyogenes. 3. The presence and the development of micro-organisms in the tissues must be regarded as the principal factor in the etiology of acute suppuration. 4. Traumatism and like causes play only a subordinate part in etiology, acting solely as predisposing factors. 5. In infection, the following conditions are of importance: *a*, The quantity of micro-organisms introduced; *b*, their collection in one spot; *c*, the condition of the tissues. 6. Staphylococcus and streptococcus are two entirely different micro-organisms, both from a morphological and a biological standpoint. 7. They differ in their cultivation forms and in their relation to the tissues of the organism. 8. Staphylococcus pyogenes: In cultivation—a more rapid growth and a good development independent of access of air; in the tissues—a rapid development, probably through the medium of the blood. 9. Streptococcus pyogenes: In cultivation—a slower growth and a more feeble development, that proceed better without free access of air; in the tissues—a slow development and localization especially in the lymph-channels. 10. In the great majority of acute local suppurations the micro-organisms enter through external wounds. 11. In some cases a general infection of the body occurs through a distant external lesion. 12. The phlegmon due to staphylococcus pyogenes occurs at the seat of the injury. 13. The phlegmon due to streptococcus pyogenes occurs at a distance from the seat of injury, following the lymphatics. 14. Both staphylococcus pyogenes and streptococcus pyogenes can lead to general infection (pyæmia, septicæmia). 15. In the general infection from staphylococcus pyogenes the metastatic collections are especially localized in the internal organs; in that from streptocccus pyogenes in the joints and serous membranes. 16. During the period of the development of the skeleton if there be a general infection from staphylococcus aureus there is a disposition for the collections to be localized in the organs of locomotion, notably in the bones.

HOW TO PURIFY DRINKING-WATER.—Professor Dobroslavine, of St. Petersburg, recommends as a means of purifying (clarifying?) drinking-water, the addition to each twelve litres of water of fifty centigrammes of perchloride of iron and seventy centigrammes of crystallized carbonate of soda. He claims that the precipitate thus formed carries with it all suspended impurities, leaving the water, after forty-five minutes, perfectly clear.

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THE CHARACTERISTC KIDNEY INFLAMMATIONS OF SCARLATINA.

IT has been quite well determined by modern researches that the scarlatinal poison produces certain inflammatory changes in the kidneys which are peculiar and striking in character. An excellent review of this subject of scarlatinal nephritis is given by Dr. Frank Grauer, in the February number of *Gaillard's Medical Journal.*

Three forms of nephritis have been found associated with scarlatina:

First, the initial catarrhal nephritis; second, the large, flabby, hemorrhagic kidney; third, acute glomerulo-nephritis, or nephritis post-scarlatinosa.

The initial catarrhal nephritis is the form met with in the first week of the disease, generally accompanying the exanthema, lasting from a few days to a week, and then gradually disappearing. It rarely leads to death. It is only recognized by a chemical and microscopical examination of the urine, in which one finds a slight amount of albumen, mucus, and hyaline casts; more rarely, red and white blood-corpuscles, renal epithelium, and granular casts. There are very rarely any symptoms pointing toward kidney trouble, and if any are present, they are liable, in the majority of cases, to be overlooked, or else attributed to the febrile condition.

The kidneys in this type are enlarged and hyperæmic, with thickened cortex and some loss of striæ.

The large, flabby, hemorrhagic kidney is quite rare. Friedländer found it present in only twelve cases out of the two hundred and twenty-nine that he examined. It generally occurs between the first and the fourth week of the disease. It runs a rapid course, and in some cases the urine is normal up to within twenty-four to forty-eight hours before death. Œdema rarely occurs. This form of nephritis is generally found in those cases accompanied by extensive angina and diphtheritic inflammation. The kidneys are enlarged and softened. The cortical substance is thickened and grayish-red in color. There is complete loss of the striæ, and the glomeruli, as a rule, are invisible. The cortex is studded with ecchymoses and large hemorrhagic infiltrations.

The most frequent and characteristic type of scarlatinal nephritis is the acute glomerulo-nephritis. This form is almost characteristic of scarlatina, and occurs in other diseases only very rarely.

Glomerulo-nephritis generally occurs in the third or fourth week of the disease, the patient being convalescent and the urine normal. Then unexpectedly some œdema appears about the patient's eyes. The urine is now found to contain albumin and to be turbid, diminished in amount, of high specific gravity, and microscopically to show epithelium, blood-cells, and hyaline casts. The disease may progress to recovery in a few weeks or may get progressively worse, uræmia setting in and death finally occurring.

Dr. Grauer gives a *résumé* of Klebs' observations, to whom is due the credit of first observing that the glomeruli are affected in scarlatinal nephritis. A review of the present knowledge of the minute anatomy of the renal tubules is also given. The description is correct in its anatomy, though deficient in syntax, the writer not being able to rid his mind of the idea that *vasa efferentia* is a noun in the singular.

The descriptions of the microscopical appearances in glomerulo-nephritis as observed by Klein, Ribbert, Klebs, and Langham are given, and to them are added the results of observations made on nine cases of glomerulo-nephritis by the writer himself. The morbid anatomy of the disease is summarized as follows. The kidneys are enlarged and hyperæmic; there is no loss of cortical striæ, and in some cases the cortices may be somewhat thickened. The glomeruli are pale, prominent, and more or less enlarged. As regards the microscopical examination, the uriniferous tubules are apparently normal. There may be some evidence of a slight parenchymatous inflammation, the epithelium may be somewhat swollen, and occasionally one may see a cast in the tubules. The following changes are found in the glomeruli: They are bloodless. One very rarely sees a red blood-corpuscle in the lumen of a capillary, especially when stained with hæmatoxylon and eserin. If present they would be stained a rose color by the eserin. When examined with a low power, the glomeruli are found larger than normal and covered with a mass of nuclei. With an immersion lens the following changes are noticed in the capillaries: In some capillaries the only change that is noticed is a thickening of the endothelial layer, which becomes more granular. In others the lumen of the capillary is filled with a rich nuclear protoplasm, which is probably composed of the nuclei of proliferated endothelial cells.

SALICYLIC ACID IN METRORRHAGIA.

THE latest remedy for uterine hemorrhage which is mentioned in current literature is salicylic acid, and if it acts with as great rapidity and certainty in other cases as it is reported to have done in two, it would seem to be a valuable addition to the list of uterine hæmostatics.

Dr. Alessandro Felici reports two cases in the *Gazetta degli Ospitali* of March 6, 1887. The first was a case of hemorrhage in cancer of the uterus, in which all the known remedies had been tried without success. By means of a pledget of carbolized cotton, moistened with a solution of salicylic acid, the writer succeeded in arresting the hemorrhage within a few minutes. The other case was apparently one of simple metrorrhagia, occurring at the menopause. The woman, when first seen, was in a state of collapse from the loss of blood.

Dr. Felici tried first the approved remedies, and succeeded in controlling the flow of blood for a time; but the hemorrhage returned again and again. Finally he took a piece of cotton on a uterine probe, and, dipping it in a strong solution of salicylic acid, introduced it into the uterine cavity. In a few moments the hemorrhage ceased and did not again return.

Although these two cases by themselves do not prove much, they may, perhaps, be worth remembering in case of trouble from uncontrollable uterine hemorrhage.

AUTO-INTOXICATION IN RELATION TO DISEASE.

The medical world of France has been much interested and, indeed, profoundly moved by the contributions to the subject of ptomaines, leucomaines, microbic poisons, and other toxic substances developed in connection with animal life. M. Peter and not a few others see a new era in medical pathology and practice opening up before them. We have at various times alluded to this subject, which is now brought up again by the publication of the work of Bouchard: *Auto-intoxication dans les maladies*, Paris, 1887.

Professor Bouchard bases his work on the researches of Selmi, Gautier, Brieger, and others, as well as extensive investigations made by himself. The fundamental principle which he elaborates is, that the human body, both in health and disease, is a receptacle and a laboratory of poisons. These poisons are derived from the digestive changes in food, from the fermentations, putrefactions, and other microbic processes in the alimentary tract, as well as from the retrograde changes in the tissues. These poisons, though being constantly elaborated, do not affect the general system, in part because the liver protects it, destroying the toxic matters as they are carried to it by the portal blood. In part, also, the system is protected by the emunctories. So far, Professor Bouchard announces nothing especially new; and it is only in the details which he believes himself able to give that any advance in our conceptions of nutrition and excretion is seen.

The French professor is nothing if not precise, and so Bouchard finds precisely seven different toxic substances in the urine; one is a diuretic substance, the second a narcotic, another is a sialagogue; one contracts the pupil, one is antipyretic, and two are convulsive. These poisons come from the blood, and are being constantly drained away by the kidney. They exist in the plasma in such amount that a man would die poisoned by his own blood if it contained ten times more than normal.

The contents of the intestines are particularly poisonous, the toxicity of the fecal matter being due to the potash, the ammonia, and the alkaloids. By intestinal antisepsis the poisonous alkaloids both of the fæces and the urine disappear; an important fact, if true, since it points to a helpful mode of treatment in renal disease.

The cause of uræmic poisoning is quite well settled, apparently, in Bouchard's mind. It is due to a number of toxic substances which unite to produce the pathological condition. They exist in the following proportions: Coloring matters, $\frac{3}{10}$; extractions, $\frac{1}{10}$ to $\frac{3}{10}$; potassium and other mineral matters, $\frac{4}{10}$ to $\frac{5}{10}$. The variety of symptoms in uræmia is due to the preponderance of one or other toxic substance.

Our author has also studied the conditions of constipation, *embarras gastrique*, intestinal obstruction, and especially dilatation of the stomach in which there is an excessive fabrication of poisons. According to Bouchard, dilatation of the stomach may cause not only the ordinary dyspeptic and nervous symptoms, but also a peculiar form of albuminuria, a kind of osteo-malacia, a variety of nodular rheumatism, and perhaps of rachitis. Naturally, in the infectious diseases, particularly typhoid, auto-intoxication plays an important part.

Icterus is another form of auto-intoxication. Here the poison consists directly of the coloring matters of the bile, and indirectly of the biliary salts. The free action of the kidneys alone saves the organism from rapidly fatal death. Acute yellow atrophy and acetonæmia are other illustrations of the auto-intoxications of a severe type.

A chapter is devoted to the subject of therapeutics. The practical outcome of Bouchard's researches is quite in harmony with the experience of ages, for it teaches the importance of keeping the emunctories open and of avoiding harsh, or easily fermentable foods. In addition, great stress is to be laid on intestinal auto-sepsis and the avoidance or cure of dilatation of the stomach.

MATERNITY HOSPITALS THAT NEED REFORMING.

If Dr. Herst's statistics, published in the *Medical News*, are correct, there is need of a very radical change in the methods followed by obstetricians and lay managers connected with some of our large maternity hospitals. For example, the death-rate from all causes in five hospitals, according to Herst, in 1885 was:

Louisville, City Hospital.....	3.75	per cent.	of women	confined.
Indianapolis, City Hospital.....	4.71	"	"	"
King's County Hospital, L. I...	4.76	"	"	"
Brooklyn Maternity	4.44	"	"	"
New Orleans, Charity Hospital.	10.22 (!)	"	"	"

"This last record," adds the doctor, "reminds one of the days when Semmelweiss was struggling for reform in the Vienna Hospital, or when Tarnier first took charge of the Maternité."

Certainly, in the light of modern knowledge, it is little short of murder to allow a three and four per cent. mortality in a lying-in hospital, except there occur some exceptional and unavoidable accidents. We trust, and are quite willing to believe, that some explanation can be given for the extraordinary mortality-rates cited above.

THE TEMPERATURE OF DWELLING-ROOMS.

Dr. D. Benjamin, of Camden, N. J., has made some observations regarding the subject of the varying temperature of our dwelling-rooms which will be found of much practical importance (*The Sanitarian*).

Everyone knows in a general way that the air of rooms is colder near the floor and near the windows, but the very exact differences of temperature as obtained by Dr. Benjamin are very striking. For example, in a room ten feet high, twelve wide, and twenty long, with a good stove and steady fire the temperature in the centre was found to be 78° F.; four feet from the window it was 70°; one foot from the window 54°, and

at the window 40°. At the height of the head the temperature was 75°, at the floor 50°, a difference of 25°. At the ceiling the temperature was 90°, when the temperature at the height of the head was 70°.

The experiments cited above were made in a three-story brick house of twelve rooms, with a warm cellar. It was further observed that when the three floors were as nearly as possible evenly heated, the second floor had a much more uniform temperature than the first or third.

The fact that the temperature of dwelling-rooms varies so widely explains, no doubt, the frequency with which young children, and even adults, take cold in the house. A child sitting on a nurse s lap in a temperature of 70° gets down and plays on the floor in a temperature ten or more degrees lower, or runs to the window, a change of twenty or thirty degrees. The habit which ladies have of wearing slippers or light shoes in the house is the cause of many troubles, for these same reasons.

The temperature of a room should be about 70° F. The hot furnace-heated houses of our cities cause a vast deal of nervous and respiratory trouble. The thermometer should be hung at about the height of the person's head, and, of course, not near the window or the stove.

Dr. Benjamin adds: "Some years ago I devised a contrivance to protect children from the death-dealing windows in cold weather, which has given me, as well as parents, much satisfaction. It is simply a fender of metal (also made of wood) about three feet high, and extending out from the window fifteen or twenty inches.

In some families where I have had these screens arranged to the windows for one or two years I have reduced the medical attendance very greatly, as my books will show.

DIABETES.

The death of prominent men from diabetes seems to be an increasingly frequent event, and the general impression prevails that diabetes, of neurotic origin especially, is commoner than it was formerly. This is probably the case, yet the statistics of the United States censuses for 1870 and 1880 do not show any striking change. In 1870, for example, the number of deaths from diabetes reported was 837, or .17 per cent.; in 1880 the number was 1,443, or .19 per cent. of the total deaths.

The fast life of the American, the accumulation of wealth, and indulgence in excessive drinking and eating would explain in part an excessive increase in diabetes. Glycosuria is said to be very prevalent in the Northwest where the air is very dry, where business competition is exceedingly keen, and where nervous wear and tear are great.

Diabetes is a disease which has many specifics, and recently we have had a new one given us based on extensive trial of ten years.

The account of it is given by the Paris correspondent of *The Lancet*, as follows:

"At a recent meeting of the Société de Thérapeutique, M. Martineau stated that he had been treating diabetes for the last ten years, with almost invariable success, by a method which he had borrowed from a practitioner now dead. He had hitherto made no communication upon the subject, because he had wished to be perfectly certain that his conclusions were not premature. The treatment consists in the administration of a solution of carbonate of lithia and arseniate of soda in aerated water, to the exclusion of all other drinks. Besides taking this with his meals, the patient uses the same as a beverage when thirsty at other times. M. Martineau affirms that this regimen has cured sixty-seven of seventy diabetic patients he has had occasion to treat."

SANITATION AND POLITICS IN SAN FRANCISCO.

The *Pacific Record of Medicine and Surgery* has been making some serious charges against the city officials of San Francisco. It claims to have proved that the large amount of the city's milk-supply comes from diseased cows, that the bacilli tuberculosis have been detected in the milk distributed, and a diphtheria epidemic is now present and is killing a dozen children a week. This, it is claimed, is largely due to defective plumbing and sewerage. The sewers were built by contract with political hacks, contracts in which the money was divided before the work was done. "The owners of the dairies where sick cows are milked, for the sustenance of infants and invalids, are also the owners of distilleries, in many cases, and *must* use their refuse. Thus we see how rum and politics conflict with sanitation."

There is some difference of opinion, evidently, about the cause of the diphtheria. One of the members of the City Board of Health advances the ingenious theory that it is due to the children "swapping gum."

Unfortunately for this theory, says the *Pacific Record*, the fatal cases occur mostly among infants too young to swap anything but unretained mother's milk.

Our Pacific contemporary is, so far, rather ahead in the controversy; although we are not denying that the practice of "gum swapping" may be a powerful promotor of diphtheria.

THE MORTALITY IN AMERICAN AND EUROPEAN LYING-IN HOSPITALS.

In a recent letter to the *Medical News* Dr. H. J. Garrigues, of this city, shows that certain statistics published by Dr. Hirst do not give a fair idea of the death-rate in American lying-in asylums (placed by Dr. Hirst at 2.59 per cent.). In the past three years, for example, under strict antisepsis, at the Maternity Hospital on Blackwell's Island, the mortality rate has fallen from 4.40 per cent., the average in four preceding years, to 1.06 per cent., the average since 1883; while the mortality from sepsis has fallen from 2.98 to 0.33 per cent.

In general terms it is thus seen that the mortality-rate from childbirth has of late years fallen in our better public institutions from four to one per cent. In many of the smaller and well equipped institutions in this country the results are much better even than this; so that, on the whole, American obstetrical work compares very well with that of Europeans. As an illustration of what can be done, it may be stated that in the last four years there have been nearly one thousand confinements in the Emergency Hospital of Bellevue without a single death from puerperal infection.

News of the Week.

DR. PETER EAGER, a prominent physician of Wyandotte, Kan., died recently of pneumonia. He was a member of the State Board of Pharmacy. He formerly lived in Newburg, N. Y., and in this city.

A PATRIOTIC DENTIST in Germany announced his intention of extracting teeth and supplying false ones, gratis, to all comers on the occasion of the Emperor William's birthday.

SUN SPOTS AND APOPLEXY.—A Rochester astronomer states that he has observed that during solar disturbances there are many sudden deaths from paralysis and apoplexy.

SIR JAMES PAGET ON MASTICATION.—In a recent address on dental surgery, Sir James Paget dwells upon the high functions of the molars, which, he says, stand half-way between the dead and the living—that is to say, between the food to be consumed and the tissues formed by it. Upon them depends very greatly the character which will be given to those tissues. In other words, the mode in which we masticate has an appreciable effect upon our future physical condition. "Who knows how much those thirty-two bites which Mr. Gladstone is believed to take at every piece of meat which he consumes may have had to do with his bodily system, and hence, by no means indirectly, with the Irish question!"

VENEREAL DISEASE AND THE BIBLE.—Probably none but a Frenchman, with the dominating sexuality of his race, would take the trouble to go through the Bible, verse by verse, hunting for evidences of venereal disease among the Hebrews of the biblical epoch. This has been done by Dr. P. Hamonic, of Paris. He discovers evidences of onanism; thinks that the *mal des Philistines* was proctitis, provoked by sodomy; believes that Moses "differentiated perfectly" spermatorrhœa from blennorrhagia, and that Herod died of a phagedenic chancre.

NINE HOURS' ARTIFICIAL RESPIRATION.—Reports from Ceylon contain an interesting description of recovery of consciousness of the taxidermist of the Victoria Museum, who was bitten by a cobra, which he thought harmless, from previous extraction of the poison-bag. For a few moments after the bite he took no heed of it, but pain and nausea were soon set up. Carbolic acid was then applied, ligatures were bound round the arm, an incision was made at the bite, and the blood of the arm was wholly removed. Various antidotes were used, but the unfortunate man lost the power of speech, and soon every muscle became paralyzed, and respiration ceased. Artificial respiration was then resorted to, and this operation was unceasingly continued for nine hours, when at last the patient made an attempt to breathe, and soon regained consciousness enough to make his wants known. He steadily improved until Friday, the accident having taken place on Wednesday, and then astonished those around him by stating he was conscious of all that had been taking place, but was unable to make his feelings known, not having the power to move a muscle.—*Medical Press and Circular.*

THE ETIOLOGY OF SCARLET FEVER.—The chain of evidence connecting human scarlatina with a certain disease (as yet unnamed) occurring in milch cows has been made remarkably complete and unbroken by the renewed researches undertaken for the British Government by Dr. Klein. It may be remembered that a specific and distinct micrococcus was isolated from the ulcers of the cow, and that this, when inoculated into calves, produced morbid lesions exactly like those of the cows at Hendon, and those usually found in human scarlatina. During the present winter Dr. Klein has examined the blood of scarlatina patients at the Western Hospital, Fulham, with the result of finding in it a micrococcus identical as to growth and cultivation with that obtained from the cows' ulcers. He further found that on inoculating and feeding mice with the two sets of micrococci, viz., Hendon and Fulham, the same pathological results were produced. And, lastly, cultures were established from the blood of mice which had perished after these inoculations; and these were found to contain the same micrococci again, growing in exactly the same manner. Similar inoculations were made on calves, which developed similar lesions to those affecting certain calves inoculated with the Hendon micrococcus last year; and from the heart's blood of these the same micrococcus was recovered by cultivation, as has been found in the Hendon cows' ulcers and the fever-patients' blood. Thus, then, the circle has been fully drawn; and a valuable discovery lies enshrined within it, one which reflects the greatest credit upon the perspicacity of Mr. W. H. Power, who made clear the circumstantial details of the Hendon outbreak, as well as the skilful and philosophic experimentation of Dr. Klein. But the practical importance of this newly observed relation between scarlatina and cow-disease transcends its mere scientific aspect, for there is obviously power, by careful supervision of herds and of dairies, to limit and curtail the action of the most blighting influence against which our youthful population has to fight. —*Medical Press and Circular.*

THE ALBANY MEDICAL COLLEGE held its Annual Commencement on March 16th, and conferred degrees upon a class of thirty-seven.

FASTING IN THE INTERESTS OF SCIENCE.—On March 11th a Norwegian, F. Cetti, began a thirty days' fast under the supervision of Virchow, Senator, Zunz, and other medical men.

THE CENTRAL COLLEGE OF PHYSICIANS AND SURGEONS OF INDIANAPOLIS held its eighth Annual Commencement on February 28th, and graduated a class of four.

THE ATLANTA MEDICAL COLLEGE conferred degrees on forty-five graduates at its Commencement, March 4th.

THE MEDICAL ASSOCIATION OF ALABAMA meets at Tuscaloosa on April 12th.

THE SOUTHERN MEDICAL COLLEGE OF ATLANTA held its Annual Commencement on March 3d, and graduated thirty students.

THE MEDICAL SOCIETY OF THE STATE OF NORTH CAROLINA will hold its annual meeting at Charlotte on April 13th, 14th, and 15th.

SUICIDE OF A DOCTOR.—Dr. A. G. Ely, of Girard, Penn., committed suicide by taking an overdose of morphine on March 27th. The doctor was one of the leading physicians and surgeons of Northwestern Pennsylvania, and had amassed a fortune of $150,000. The delusion that his property was getting away from him drove him to self-destruction. Dr. Ely was sixty-seven years of age, was a graduate of Hamilton College, New York, and graduated from Geneva Medical College in 1841.

THE MEDICAL SOCIETY OF THE COUNTY OF NEW YORK, at the stated meeting held Monday evening, the 28th inst., unanimously indorsed the Senate Bill, No. 391, entitled "An Act to regulate the Licensing and Registration of Physicians and Surgeons, and to codify the Medical Laws of the State of New York;" and urged all its members to be active, with their personal influence and correspondence with members of the Legislature, in favor of the Act becoming a law, as it was opposed chiefly by one notorious quack residing in the city of New York. Make it a personal matter not to be outfooted.

LAWS REGARDING COLOR-BLINDNESS IN ALABAMA.—The last Legislature in Alabama passed an act compelling all railroad employés engaged in any manner in the running of trains to be examined for color-blindness and defective sight. As a Board of Examiners the Governor has appointed Drs. Benjamin J. Baldwin, of Montgomery; W. D. Webb, of Birmingham, and W. H. Saunders, of Mobile.

CERTIFICATES OF ILLNESS.—We learn from the *Boston Medical and Surgical Journal* that the Faculty of Harvard College has promulgated the extraordinary rule that in all cases in which the college has heretofore required a physician's certificate to the fact of illness of absent students, such certificate must specify the cause of illness, in order that the Faculty may be able to judge of the validity of the excuse for absence. The *Journal* says that such a requirement is unjust to the physician and student. No doubt this is true, yet we fear that such a regulation would never have been made if Boston and Cambridge physicians had not got into lax habits in the matter of giving certificates.

A MEDICAL SPEAKER.—Dr. Baxter has been elected Speaker of the Ontario Legislature.

THIRST IN DIABETES.—Duchenne recommends (*Nouveaux Remèdes*) the administration, three times a day, of a drachm of a solution of potassæ phosphas, two parts in seventy-five parts of water. It is best given in a little wine or hot tea.

THE LATE DR. JOHN W. RUSSELL.—Very fitting resolutions of respect to the memory of the late Dr. Russell were adopted at the last meeting of the Knox County Medical Society.

HOMŒOPATHY AT ANN ARBOR.—We are pained at the lightness and jocosity with which our esteemed contemporary, the *Medical Age*, treats the profound ethical questions arising periodically at Ann Arbor. The present trouble there, we are told, is again due "to the complex or duplex system of teaching homœopathic and 'regular' students. Homœopathic and 'regular' anatomy, physiology, etc., being supposed to be identical, the homœopathic department at the university is not furnished with chairs on these subjects, and its students are sent across the campus to take them in the regular way at 'regular' hands. This they do not seriously object to, but they do desire, very much, when they are *au fait* in these particular branches, to have the 'regular' professors give them certificates to the fact. The 'regular' professors, however, find that to certify that a homœopath is proficient in these branches would be a violation of the Code of Ethics; it is enough for them to teach homœopaths, but for them to say that such teaching has been effective would be very 'irregular.' The common herd cannot, of course, comprehend the niceties of the distinctions, but that makes little difference—they can look on and enjoy the fight all the same.'

PROFESSOR H. C. WOOD writes us that the statement in our issue of March 26th that he had been offered the Chair of Medicine at the Johns Hopkins University has no foundation in fact.

PROFESSOR ARLT, of Vienna, who has been suffering for a long time from severe illness, died on March 7th.

THE AMERICAN DERMATOLOGICAL SOCIETY holds its next annual meeting, at Baltimore, on August 31st and September 1st and 2d.

THE AMERICAN NEUROLOGICAL ASSOCIATION holds its thirteenth annual meeting at Long Branch, N. J., on July 20th, 21st, and 22d.

THE MEDICAL COLLEGE OF INDIANA graduated a class of twenty-nine at its Commencement on March 2d.

HOMŒOPATHIC HOSPITALS AND LAY MANAGERS.—We are not surprised that the lay managers of homœopathic hospitals should insist on having their institutions conducted on strictly homœopathic principles. It comes very near to being fraudulent when laymen are asked to support a homœopathic hospital in which the Hahnemann dogmas are neglected and all the resources of rational medicine are used. Laymen contribute to homœopathic charities because they believe in homœopathy. *À propos* of this we learn that eight of the women physicians connected with the "Medical, Surgical, and Maternity Hospitals of the Women's Homœopathic Association of Pennsylvania" have resigned because the managers have made a rule that "no medicines, except strictly homœopathic potentized remedies, shall be allowed for use in the dispensaries or in any department of the hospital."

MEDICINE AND THE TALMUD.—Dr. Carl von Klein intends to publish a work on medicine in the Talmud, if he can get a thousand subscribers.

NEW YORK IN 1833 contained a population of 202,957 and about 452 physicians, of whom 302 were members of the County Society. The proportionate number of doctors was quite as great, therefore, fifty years ago as it is now.

INTUBATION.—Dr. Joseph Eichberg, of Cincinnati, reports 6 more cases of intubation of the larynx for croup (*Lancet and Clinic*), making a total of 8 cases, with 5 deaths. Dr. Jerome A. Anderson reports 10 cases of intubation (*Pacific Medical and Surgical Journal*, March, 1887), with only 1 recovery. Dr. Anderson has done 22 tracheotomies, with 8 recoveries.

Reports of Societies.

NEW YORK ACADEMY OF MEDICINE.

SECTION IN PRACTICE.

Stated Meeting, March 15, 1887.

E. DARWIN HUDSON, M.D., CHAIRMAN.

DR. C. E. BILLINGTON read a paper [see p. 397] on the

LOCAL TREATMENT OF DIPHTHERIA.

DR. A. JACOBI opened the discussion [see p. 402].

DR. J. LEWIS SMITH continued the discussion, and said he thought that most physicians would agree with Dr. Billington's view that diphtheria was primarily a local disease which became constitutional. He thought, also, that this theory had been proved by the experiments of Wood and Formad, of Philadelphia. But Dr. Smith believed that it was not invariably and *always* a local disease primarily.

In the local treatment of this affection nothing of an irritating nature should be used. Any local application that produced smarting which lasted more than four or five minutes should be discarded. It had been his custom to use very mild local remedies. He regarded the muriate of pilocarpin, so fashionable only a short time ago, as a very dangerous remedy, on account of its liability to produce disastrous œdema of the mucous membrane of the air-passages.

The nostrils, especially, required dilute solutions, and it had been his custom to use boric acid, ʒj.; borax, ʒij.; chloride of sodium, ʒj.; and water, Oj. Use warm. He recommended the use of the ordinary medicine-dropper in applying the remedy to the nostrils.

Another favorite local application consisted of lime-water, to which had been added bicarbonate of soda in the proportion of ʒj. to ℥ viij., and used with either a spraying apparatus or a brush. The sponge he regarded as altogether too harsh for making local applications, as it was very liable to remove forcibly the false membrane, which was not desirable. Probably some benefit attended the use of trypsin, and it could be added to the above alkaline solution.

DR. F. H. BOSWORTH thought that the paper should be taken in connection with Dr. Billington's papers in 1875 and 1880, in which could be seen the painstaking labor bestowed upon every case. He had nothing to say in the way of criticism.

There was one predisposing cause not mentioned to which he would like to direct attention, and that was the development of glandular tumors, as enlarged tonsils, where the germ finds a favorable nidus. These, as well as mucous membrane, the seat of acute inflammation, afforded a favorable nidus for the beginning of the disease.

One of the striking features of the paper was that no specific remedies were recommended, and yet it seemed to him that an immense amount had been taught in the doctrine that

TO DESTROY THE MEMBRANE AND THE LOCAL AFFECTION WAS TO DESTROY ITS POWER FOR EVIL.

With regard to the local use of remedies in the nasal passages, the syringe, even in the hands of trained nurses, often involved a certain amount of danger, while the use of spray was attended with no danger, and nothing was better for the purpose than the Millard atomizer, No. 5.

He regarded the use of the galvano-cautery as utterly absurd, for "destructive potency" existed in other agents which could be more safely employed. He would reject carbolic acid, and use an agent that kills the germs. Pilocarpin, also, he regarded as most absurd.

DR. D. BRYSON DELAVAN said that no one better than Dr. Billington knew how highly he appreciated his service in the treatment of diphtheria, and he also mentioned that a professional friend had told him that he had saved more patients during the last five years, since reading Dr. Billington's papers, than he had saved in all his practice before that time.

He saw no reason why carbolic acid was safer, but many reasons why it was inferior to bichloride of mercury, which in his hands had been productive of more good than any other drug. He believed it to be best to spray the nostrils, even though there were no manifestations of diphtheria within them. He preferred to use spray because it was less harmful when used carelessly, and when used carefully it was as efficient as injections. Trypsin was a slow solvent, but he had used it with more or less good results. Still, to rely upon it might be to neglect proper disinfection of the throat and nose.

DR. T. J. HUTTON, of Fergus Falls, Minn., was present, and on invitation gave his views concerning the treatment of diphtheria by the local use of

SOLUTIONS OF NITRATE OF SILVER.

He believed that there were probably fifty remedies that would cure diphtheria if we only knew how to use them. Nine years ago he hit upon a plan of treatment which had served him so well that in 209 cases only 12 patients had died. He claimed that it could be *demonstrated* that diphtheria was a local disease, and that by his treatment it could be arrested. The only limitation or modifying condition rested in the question whether or not diphtheria was the same everywhere. He was not positive on this point, but believed that it was the same wherever it occurred. It might be that country districts furnished greater resistance to the disease than did cities, and hence there might be an apparent difference. But, in the locality where he was practising, with diphtheria as he had seen it, he believed that the treatment which he had used was infallible when the patients were seen in the first stages of the disease, and that it saved to the uttermost in the septic cases. Nothing was claimed for the treatment in cases of stenosis.

There were two indications to be met in the treatment.

First, the disease was local at the beginning, and the indication was to destroy the false membrane and keep it destroyed.

Second, the disease manifests vital depression speedily, and therefore the patient must be supported by all possible means.

To meet the first indication he uses *lunar caustic* in solution, varying in strength from twenty to fifty grains to the ounce of water, applied with a camel's-hair brush, and applied so long as any membrane continues to form.

THE CHIEF POINT TO REMEMBER WAS THAT THE MEMBRANE SHOULD BE DESTROYED COMPLETELY.

The use of the remedy in this way was not painful. Besides this he uses chlorate of potash in cases in which the patients can gargle: ʒ iss. of potash to ℥ viij. of water, and gargle every fifteen minutes; or, if the patient be too young to gargle, administered internally.

Abundant supply of fresh air. If this cannot be obtained in-doors, take the patient out-of-doors. Keep the patient *in the recumbent posture in bed*, and warm. In nasal cases he uses carbolic acid in the form of vapor, or in glycerine, or in a one per cent. aqueous solution.

In the second stage he uses stimulants, food, and chloride of iron and quinine; and when the septic stage appears, milk, eggs, concentrated nourishment, whiskey, brandy, wine, etc., in as large quantities as the patient can take, at short intervals. For adults ten drops of the tincture of iron, with half a grain of quinine, every two hours, alternating, night and day, with six or eight grains of chlorate of potash in solution. In the milder cases there may be no need of the high-pressure internal treatment.

DR. J. E. WINTERS was in accord with Dr. Billington,

but had found that local treatment in diphtheria, in young children, limited to the throat, was impracticable.

The *first* object of local treatment of throat diphtheria, if the disease was primarily local, was to destroy the cause of the poison, and to do that some strong caustic must be used. Yet everyone who had spoken, except the last gentleman, had opposed this method.

The *second* object was to obtain the benefit of a successful and safe antiphlogistic treatment, which in young children was impossible.

The *third* object was to remove, or absorb, or destroy the membrane, and he did not see why so much importance was attached to this when it was formed only in the upper part of the throat, for if removed or destroyed it rapidly returns. But nature removed it by a catarrhal process beneath the membrane, and that was the only safe way in which to remove it. That which promoted removal of the membrane in this manner was antiphlogistic, and of all measures to be adopted *heat* was the best—heat, externally and internally, faithfully and persistently applied; *hot* applications, and kept constantly hot.

THE PRIMARY INDICATION WAS TO PREVENT THE SPREAD OF DISEASE INTO THE LARYNX, AND HEAT DID THIS.

Implication of the air-passages was accidental, if the case was properly treated from the outset. The patient must be kept absolutely still, and not changed from the recumbent posture *for any purpose whatever*. Then use heat, as far as it can be used, externally and internally. He occasionally used sprays. Steam he had found specially beneficial, and also turpentine, as mentioned by Dr. Jacobi, with internal remedies mentioned by Dr. Billington.

In nasal diphtheria successful local treatment can be carried out if the attendants have sufficient tact. In the *first place*, use something that does not irritate the child in the least, and it will very soon allow thorough treatment so long as it does not produce pain. All this can be done without lifting the child up, and by simply turning it upon its side.

For the swollen glands he could not subscribe to the local external use of ice. In every case in which he had seen it used, he believed it had been injurious. He was afraid of the external use of ice in diphtheria. In septic cases he would use stimulants, when indicated, in large quantities perhaps, and concentrated nourishment.

Dr. H. D. Chapin greatly preferred spray to the syringe in treating the throat, as syringing usually gives rise to the complication of vomiting. He usually has the tongue depressed, and then gives the bulb two or three compressions, when the solution is thrown directly upon the membrane.

Dr. Beverley Robinson was very much opposed to the use of any form of douche in either the throat or nose, because it would produce vomiting. He favored sprays, but the ordinary spray-producer was of no special use. One should be used that gives quite a forcible stream, and the only one which he employed was Lefferts', and he uses it with a *single* bulb, so as to get an intermittent stream. The use of a medicine-dropper he regarded as an illusion and a snare. As to the use of caustics, it was old, and had been abandoned by most distinguished physicians as being an utterly useless method of treatment.

He had read with great interest Dr. Jacobi's views concerning the local use of chlorate of potash and its action on the mucous membrane; but he was of the opinion that cubebs was a more useful remedy than the chlorate of potash. Formerly he believed that it had a specific effect against diphtheria, but that view he had abandoned. He did not believe in any remedy that was said to cure all cases. He also believed that the indications mentioned by Dr. Billington might be carried out as thoroughly as possible and still occasional deaths would occur.

Dr. Andrew H. Smith agreed with the practice set forth in the paper, but disagreed with some of the theories advanced concerning the nature of the disease. He was very glad to hear Dr. Winters say that the membrane did not constitute diphtheria, as he did not believe that diphtheria was a local disease. Local lesions occurred in the throat, so also they occurred in the throat in scarlet fever.

NOR DID HE BELIEVE THAT A MEMBRANE WAS AN ESSENTIAL PART OF DIPHTHERIA.

He believed that diphtheria was a disease which was received into the general system, and that it had a local manifestation in a peculiar inflammation of the throat, almost invariably attended by the production of a false membrane that does not constitute the disease.

Thorough local disinfection, however, does very much toward diminishing the mortality of this disease, and it should be applied thoroughly to the nose as well as the throat.

Fluids injected should be of a density corresponding to the blood, in order to avoid irritation. He preferred a weak solution of the bichloride of mercury, with sufficient common salt to give it the proper density—say 3j. to a pint of a solution of 1 to 2,000, 3,000, or 4,000 of the bichloride. He also preferred a soft rubber instrument, made by inserting into a small bulb a nipple like that on the end of a medicine-dropper.

Dr. W. H. Thomson had no doubt that, in the majority of cases of diphtheria, local treatment might be all that was required, and he thought that it should be employed. During his experience of twenty-five years he had had opportunity to observe one case in which could be studied not only the period when the manifestations in the throat began, but the condition of the patient before he was sick, when it was suspected that he would have diphtheria.

One of two bed-fellows had nasal diphtheria. The young men were separated at once. The one who had shown no symptoms was eighteen years of age. He was very carefully watched, and his nostrils and throat were carefully inspected. On the ninth day he was taken with a *severe* rigor and chill. The physician inspected his throat within ten minutes after its occurrence, and nothing except a slight redness was found in either throat or nostrils. Within one hour the posterior wall of the pharynx was intensely injected. The constitutional symptoms were extremely grave from the very commencement. On the next day—not until then—diphtheritic membrane was found upon the posterior pharynx, low down, which developed downward and soon caused intense dysphagia, and on the next day swallowing was impossible.

Local treatment was employed, and constitutional treatment by the rectum, and on the sixth day all the membrane had disappeared. The patient had a good appetite, and his temperature was normal. On the evening of the seventh day he had another chill, albumen was present in large quantity in the urine, and within thirty-six hours he died of cardiac paralysis due to diphtheritic poisoning; the membrane appearing *subsequent* to the onset of most serious constitutional symptoms, and disappearing *before* the development of the condition which terminated the life of the patient.

His own treatment had been based upon the internal administration of the antiseptics that can be taken in the largest doses, and the chlorine class can be taken in larger quantities than any other. He uses bromine locally. He also recommends the persistent use of oxygen gas, which is an admirable antiseptic, especially when there is any tendency to necrotic changes.

Dr. A. L. Loomis thought that Dr. Billington had reached the conclusion that every sensible physician must reach who watches his cases as carefully as the writer of the paper had done. He felt confident that diphtheria, in a certain proportion of cases, occurs primarily as a local disease; but he also believed that, in the great ma-

jority of cases, it was already constitutional when the local manifestations appeared. He had travelled over the ground of mechanical removal of the membrane, the use of caustics and astringents, etc., and had come to a place where cleanliness and disinfection seemed to be the only things to be accomplished locally, and these measures were to be sustained by constitutional remedies. In other words, it was his plan to treat the case rather than the diphtheria.

Dr. Billington said that it would ill become him to make any additional remarks after the very generous and courteous reception that had been given to his paper.

The Section then adjourned.

MEDICAL SOCIETY OF THE COUNTY OF NEW YORK.

Stated Meeting, March 28, 1887.

Laurence Johnson, M.D., President, in the Chair.

Dr. Matthew D. Mann, of Buffalo, N. Y., read a paper entitled

REMOVAL OF SOLID UTERINE AND OVARIAN TUMORS BY LAPAROTOMY,

in which he gave briefly the histories of *nine* cases. The first three were cases of *solid tumors of the ovary*, which occur only rarely. Mr. Tait had said that they do not occur at all; but in that he was wrong, as a study of the literature of the subject would show.

The remaining cases were those of solid tumors of the uterus. The fifth was especially interesting, because of the occurrence of secondary hemorrhage due to

SLIPPING OF THE SILK LIGATURE FROM THE PEDICLE.

This necessitated the opening of the abdominal wound, securing the bleeding stump with a clamp (Wilson's), cleansing the peritoneal cavity, and again closing the abdominal opening. The patient made a good recovery.

The eighth case was interesting because of the occurrence of

PREGNANCY WITH A LARGE UTERINE FIBRO-CYST.

His general conclusion was that removal of solid tumors was not more dangerous than removal of cysts. The diagnosis was more difficult than that of cysts, but the exploratory incision in many cases was less dangerous than allowing the tumor to remain.

As to the indications for the removal of the solid tumors, there was no doubt with regard to the ovarian, but with reference to the uterine there was some difference of opinion.

To Mr. Keith's indications he would add

TWO NEW INDICATIONS

for consideration, namely: Fibroid tumors of the uterus which are wearing the life of the patient out by the intense suffering which they cause, and possibly another class of cases found in the sloughing intra-uterine fibroids.

He preferred the *external* treatment of the pedicle to the internal, for uterine tumors, but

NOT FOR OVARIAN TUMORS,

even though they be solid. Wilson's clamp had contributed to his success.

Dr. C. C. Lee opened the discussion, and said that on the main points in the paper he thoroughly agreed with its author, and in the matter of diagnosis he had nothing to add. He did not, however, quite agree with Dr. Mann with reference to the indications, and thought that he had given rather too wide latitude for the performance of hysterectomy. In all solid tumors of the uterus, Dr. Lee believed that, in young women and where there was a chance for arresting their growth, the methods recommended for that purpose should be most thoroughly considered,

BEFORE RESORTING TO LAPAROTOMY

for the purpose of removing the tumor itself. To make the exploratory incision, to determine whether or not laparotomy should be performed, was quite another matter from that under discussion.

He had never hesitated to reopen the abdominal cavity in cases of secondary hemorrhage, or the early development of septicæmic symptoms, with the view to ascertaining their cause.

Dr. James B. Hunter agreed with Dr. Mann in nearly all that he had said, and especially with regard to the propriety of

REOPENING THE ABDOMINAL CAVITY

under the circumstances mentioned. As to the treatment of the pedicle of solid uterine tumors, he was strongly in favor of the *external-abdominal method.* He preferred to use the elastic ligature rather than the clamp. He thought that the clamp should be allowed to remain as long as possible, in order to make sure that the attachment of the pedicle would not give way.

In certain cases Hegar's operation of removal of the ovaries and tubes would give excellent results.

Dr. Wylie agreed with Dr. Mann except as to some of the minor details of the operation. There was no doubt in his mind regarding the propriety of reopening the abdominal cavity in cases of hemorrhage. But there was

A PRECAUTION IN CASES IN WHICH HEMORRHAGE MIGHT BE EXPECTED,

which he had used and would recommend—namely, the introduction of a drainage-tube, by which the beginning of the bleeding could be at once determined. This tube must be constantly watched. Dr. Wylie would not drop any pedicle that contained muscular tissue into the abdominal cavity. He does not use the elastic ligature, but a metallic constrictor.

Dr. Mundé was in accord with the main views advanced in Dr. Mann's paper. He preferred to use rubber-tubing rather than the solid-rubber ligature, but preferred to use some form of metallic constrictor to either. In the event of the occurrence of hemorrhage after the operation, the abdominal cavity should be reopened and the source of the bleeding sought for.

As to diagnosis, he regarded it as difficult, and especially between

SOFT UTERINE MYOMATA AND MULTILOCULAR OVARIAN CYST.

He had noticed one feature which had aided him somewhat, and he deemed it worthy of mention; that is, when the tumor is a myomata the abdominal walls are thick, whereas in cases of ovarian cyst, which grows more rapidly, the abdominal walls are thinner.

From his observation of cases operated upon by Billroth, Martin, and others, he had come to believe that the pedicle of solid tumors should not be dropped.

Dr. E. N. Liell mentioned that Dr. H. Marion Sims had removed two solid ovarian tumors within the last year, and the specimens had been presented to the New York Pathological Society. Both patients recovered.

Dr. Mann, in closing the discussion, said that his method, in removing the clamp, had been to first remove the clamp, leaving the needles in place, and then apply an

ELASTIC LIGATURE WHERE THE WIRE HAD BEEN,

and leave it to cut its way through the pedicle.

As to Hegar's operation, he did not wish to condemn it, but he had thought that it was not so good a method of treatment as some others. Doubtless in some cases it was the operation to be preferred.

He accepted Dr. Wylie's suggestion as to the use of a drainage-tube, in cases in which hemorrhage might possibly occur, as an excellent one.

He was well aware that the diagnosis was difficult, but doubted very much whether Dr. Mundé's suggestion regarding the thickness of the abdominal walls would be proved to be of very much value.

On motion by DR. DOUGLAS, the Society gave to Dr. Mann a vote of thanks for his interesting and instructive paper.

THE PRESIDENT announced the death of Dr. Lewis Fisher, which occurred in Florida, March 1, 1887.

The Society then adjourned.

Correspondence.

OUR LONDON LETTER.

(From our Special Correspondent.)

ANOTHER CASE OF RUPTURED BLADDER—RUPTURE OF THE SMALL INTESTINE—GOUTY PAROTITIS AND GOUTY ORCHITIS—PERFLATION IN THE SURGICAL TREATMENT OF EMPYEMA—SOME INCONSISTENCIES OF MEDICAL JOURNALISM—THE DENTAL HOSPITAL OF LONDON—ANOTHER NEW HOSPITAL—DEATH OF DR. CARRINGTON—CLOTTAGE OF THE URETERS—DERMOID CYST OVER STERNUM—SECONDARY CANCER OF PROSTATE—LARGE GALL-STONES—THE LONDON HOSPITAL.

LONDON, March 12, 1887.

A FEW weeks since I chronicled two cases of ruptured bladder successfully treated by abdominal section, and the sewing up of the wound in the bladder. I have now to record a similar case, which promises to have as fortunate a termination. Last week a man was admitted into St. Bartholomew's Hospital suffering from great pain, inability to pass his water, and in a marked state of collapse. These symptoms had rapidly followed the receipt on the previous evening of a blow over the hypogastric region—the bladder being full at the time. The patient was seen by Mr. Walsham, who thought the case a suitable one for abdominal section, and operated as soon as possible. The diagnosis, previously made, of "ruptured bladder" was speedily confirmed, a rent an inch and a half in length being found in the wall of that viscus. A large quantity of urine was found in the peritoneal cavity. This ran away freely as soon as the abdomen was opened. All the urine having been removed, the abdominal cavity was thoroughly washed out with a one per cent. solution of boracic acid. The wound in the bladder was closed with sutures, which were passed through the peritoneal and muscular coats only. The abdominal wound was closed and dressed antiseptically. There was little shock, and no sign of peritonitis. It was not found necessary to leave a catheter in the bladder, nor even to introduce one at intervals to evacuate the urine, which the patient was able to void voluntarily without much difficulty every four hours. He is now practically convalescent.

A somewhat similar case, but involving the intestine instead of the bladder, is at present under the care of Mr. Croft at St. Thomas' Hospital. The patient, a man aged thirty-six, was admitted a few days since suffering from acute peritonitis. He had received a severe injury to the abdomen the previous evening, and had suffered severely from pain and vomiting. Notwithstanding this he had walked to the hospital. On admission he was found to have all the symptoms of acute peritonitis. His temperature was 103° F. There was marked dulness in the hypogastric region. Rupture of the bowel being considered probable, the abdomen was opened, when the small intestine was found ruptured. The rent in the intestinal wall extended nearly round the bowel, the latter being, therefore, almost severed. The peritoneum was acutely inflamed, and contained a quantity of fæces. The abdomen was washed out with a solution of boracic acid. The wounded bowel was then brought to the surface and stitched to the parietes in the abdominal wound—an artificial anus being thus formed. The peritonitic symptoms rapidly disappeared and neither pain nor vomiting followed the operation. By the last accounts the patient continues to progress favorably.

At the Medical and Chirurgical Society, on March 8th, the proceedings opened with the reading of a paper by Dr. D'Estrées, of Contrexville, on "Gouty Parotitis and Gouty Orchitis." In the ensuing discussion Dr. Garrod, referring to the rarity of these affections, remarked that he had been able to collect two thousand cases of gout, but not one of these had had parotitis.

Dr. Bernard O'Connor mentioned a case of gout, under his own care, in which swelling of the sublingual glands occurred.

A paper by Dr. Ewart and Mr. Fitzroy Benham was then read, in which the history of a case of empyema in which perflation had been successfully employed was narrated. The patient was a boy, aged ten, who had had enteric fever. When convalescing, symptoms, first of peritonitis, and then of pleurisy, came on. Empyema followed on the left side. As an additional complication signs of pulmonary gangrene declared themselves. Aspiration having given only partial relief, the chest was opened in front at the level of the fifth space in the anterior axillary line, and behind at the level of the ninth space in the scapular line. Further, but not sufficient, relief was afforded, although a quantity of pus came away in addition to that previously removed by aspiration. It was therefore determined to employ perflation. By means of a hand-ball bellows air was blown through a ten per cent. solution of carbolic acid, and then introduced into the chest through a piece of india-rubber tubing passed through the upper opening for several inches. This procedure, which Dr. Drewitt subsequently likened very happily to "blowing an egg," was highly successful, and caused the expulsion (through the lower opening) of a mass of fetid pus, a piece of gangrenous lung, and some thick pieces of false membrane. The operation was performed under the spray, and was repeated on two subsequent days. After the eighth day the discharge was only serous. Both wounds closed in the fourth week from the date of perflation.

Sir Dyce Duckworth said he believed the practice of washing out the pleura was a mischievous one, and in this view several subsequent speakers seemed to concur. Mr. Godlee suggested the insufflation of iodoform into the pleural cavity. Mr. Pearce Gould preferred a single large opening into the pleura behind. Dr. Ewart, in replying, agreed as to the value of a large opening. With a double tube, perflation could be performed with only one opening. He had not found, in five cases of left empyema, that any effect on the heart was produced by the perflation.

The inconsistencies of medical journalists are hard to fathom. Not many weeks since, one of our weekly medical journals, which has been very free in condemning the system of unqualified assistants, was "called over the coals" pretty sharply by a contemporary. The journal in question, it seems, while battering away at unqualified assistants in one column, did not disdain to take their money for inserting their advertisements in another column.

Last week Mr. Jonathan Hutchinson wrote in wrath to the *British Medical Journal* to denounce the conduct of the *Illustrated London News* in inserting a very fulsome puff (with portrait) of a gentleman whose name has been removed from the *Medical Register* for unprofessional conduct in relation to his method of practice and the advertising of a secret remedy. This week, however, the former journal inserts, in the place of honor on the front page, the advertisement of a medical rubber who is not, and never has been, a member of the profession, and who is, moreover, at the present moment,

undergoing a sentence of twelve months' hard labor for an indecent assault on his servant. The same advertisement also appears in the *Lancet*, though not in so prominent a position. As both these journals referred to the case at the time, and commented very severely on the newspapers for improperly describing the accused as a "surgeon," they can scarcely be ignorant of his status. Yet they not only insert the advertisement of a work on massage by him, but allow the letters B.C., B.S., to appear after his name, implying that he is a university graduate in surgery, whereas he is not even qualified. After this, it is rather hypercritical to write against quackery, and censure the improper assumption of medical titles by men who are, perhaps, qualified. A gentleman to whom I pointed out the advertisement remarked, "That journal ought to be termed the *British Medical Quack*."

Two days ago the Dental Hospital of London held their twenty-ninth annual meeting, when it was stated that during the past year no fewer than 43,745 cases had been treated. Sir James Paget presided at the dinner held in the evening, and observed that the hospital was, in his opinion, the best of its kind that could be found in Europe, or perhaps in the whole world. It also fulfilled a useful office as a school of dental surgery, and encouraged the study of dental science. Two of the finest scientific monographs in the English language, by John Hunter and Richard Owen, respectively, were due to the study of the teeth. He congratulated the dental profession on being now organized as a legalized distinct body.

Another institution for the treatment of skin diseases has been started under the name of The London Skin Hospital. Out-patients only are to be received at first.

The new hospital is the result of a dispute which occurred last summer at St. John's Hospital for Skin Diseases, in Leicester Square. One member of the staff resigned, and, after some delay, has, in company with two other gentlemen, started a fresh clinic within bowshot of the parent one.

LONDON, March 19, 1887.

IN a recent letter I referred to a paper lately read before the Clinical Society of London by Dr. Carrington, of Guy's Hospital. I now have to announce his death, after an illness of only two days. He was a distinguished graduate of the London University, having obtained exhibitions and gold medals at several examinations. Although only thirty-three years of age, he had become the senior assistant physician, and would consequently, on the next vacancy, have become full physician with charge of beds. As a teacher he was a favorite, and had already made a mark in medical literature. Within the last four years Guy's Hospital has lost by death four members of its staff and, curiously enough, all on the medical side, viz., Drs. Fagge, Mahomed, Moxon, and Carrington.

At the meeting of the Medical Society of London on Monday last Mr. Harry Fenwick proposed a new operation, which he termed "clottage of the ureters." He brought it forward as an expedient that might be adopted in cases of profuse and uncontrollable hæmaturia, as from a kidney hopelessly crushed by an accident or affected with advanced carcinoma. The operation was performed by (1) introducing his ureter-aspirator into the bladder, (2) practising suction on the ureter of the damaged kidney so as to draw the blood-clots into the eye of the instrument, and (3) making light pressure with the back of the instrument against the finger in the rectum, thereby nipping the ureter lightly and giving time for the blood-clot to collect in the pelvis of the kidney. Mr. Fenwick narrated a case, that of a man aged fifty-one years, who had right renal carcinoma, in which the method was successfully employed. As there was no autopsy, the changes produced could not be verified.

At the Pathological Society on Tuesday evening Mr. Clutton showed a large dermoid cyst removed from over the sternum of a woman thirty-nine years of age. It was first noticed when she was six weeks old. When she was ten years old it was tapped, but no fluid withdrawn. When she was nineteen it was as large as a hen's egg. It remained stationary for some years, but during the last five years had more than doubled in size. After drawing off some of its contents it was ascertained that there was no hole or depression in the sternum, and the cyst was removed entire. The contents (eleven ounces) were found to consist of epidermis, cholesterine, and fat. The wound healed by first intention. Mr. Clutton's specimen excited much interest, and several members related somewhat similar cases. Mr. Stephen Paget remarked that in men with hairy chests there was generally a regular parting at the angle of Ludovic, the hair above growing upward and that below downward. This might indicate some developmental peculiarity of the dermoid structures at this point. The president referred to a case in which there was also a spina bifida. Mr. Clutton, in replying, observed that dermoid cysts might occur in any part of the body, but were most commonly found in the middle line or along lateral fissures.

Mr. Fenwick exhibited a specimen of secondary carcinoma of prostate. He had, he said, been able to find only four cases of the kind recorded. In three of these the primary growth was in the stomach and in the dura mater in the remaining one. In his own case the post-mortem examination showed that the lung was primarily affected, and the liver, spleen, kidneys, prostate, and spinal cord secondarily.

Dr. Pye-Smith showed a large gall-stone passed by a lady aged seventy-eight. She had never had jaundice, but suffered from increasing constipation, ending in obstruction. Rectal examination revealed an obstruction above the sigmoid flexure which was suspected to be cancerous. After thirteen days' obstruction the patient passed the gall-stone shown, and the symptoms disappeared. A second larger stone was also shown. It had been passed by a woman of sixty in whom constipation never culminated in complete obstruction.

The London Hospital is the largest in the kingdom, comprising as it does accommodation for some eight hundred patients. Its out-patients are practically innumerable; so much so, that it has within the last few years been found necessary to devise methods for limiting the number and drafting off elsewhere those found to be unsuitable for hospital treatment, being either trivial cases or patients able to pay something. Several other hospitals are contemplating the adoption of similar methods to restrict the numbers of out-patients. Although presenting such a wide field for clinical study, the London Hospital, however, is by no means the largest school of medicine in London. This pre-eminence is enjoyed by St. Bartholomew's Hospital, which, however, in its turn, is far outstripped by the University of Edinburgh. The (comparatively) moderate success of the London Hospital as a school of medicine is doubtless in large measure due to its position. It is located at the East End in the centre of a populous but extremely unfashionable district, viz., in the Whitechapel Road, where its long line of frontage forms quite a feature. Its staff have never been deficient either in learning, zeal, or teaching power, but the success of the school, although considerable, has never been commensurate with the growth of the hospital. The West End hospitals draw an increasing number of students, who prefer the west to the east as a residential district. Considerably more than one-half of the staff of "The London" live west, although this involves a journey of forty minutes to get to their clinique. The position of the London Hospital, both as a hospital and as a school of medicine, is at present gravely imperilled by some recent disturbances which have taken place there. Great dissatisfaction has been expressed among the students by the way in which "outside students," who have commenced their studies elsewhere (in many cases at the University of Cambridge) and only come to the hospital for clinical work, have been promoted to important residential appointments in the hospital over the heads of "London"

students who have entered for the full course. This appears to be the head and front of the offending on the part of the hospital authorities, and the students feel so strongly on the matter that I understand a printed statement has been circulated by them, though I have not seen it. It is rumored that three students were about to be rusticated for the part they took in a correspondence arising out of the above matters, but wiser councils prevailed and, the students showing themselves to be firm in their position and united among themselves, it has been agreed that their statements shall be listened to and, if possible, all grievances removed.

EPIDEMICS OF PNEUMONIA IN THE COUNTRY.

To the Editor of The Medical Record.

Sir: Your editorial, March 5, 1887, calls to mind a singular experience of my own.

In September, 1884, I treated a family living far out in the hills of Northern California. The household numbered twelve—father, mother, and ten children. Within less time than a month ten of the family were sick. Six of the number escaped with bronchitis and pulmonary congestion of different degrees of severity, while four of them suffered with acute lobar pneumonitis.

These four were attacked within a few days of each other. In three of them the lower lobe of the right lung alone was affected; in the fourth the inflammation extended to the lower lobes of both lungs.

I was never able satisfactorily to account for this epidemic (?) of pneumonia. The home was forty miles from the sea-coast, at an elevation of about twelve hundred feet. It was located on the southern slope, was free from fogs, warm and dry.

The sickness occurred at a season of the year when, owing to the excessive dryness of the soil and atmosphere, very little decomposition or putrefactive changes are taking place. The sanitary conditions about the premises were as effectual as they had ever been before, or have since been. I found one defective, obstructed sewer near the house, where the waste waters from the kitchen and wash-rooms were allowed to stand and become impure. This I had rectified. The family has since enjoyed uninterrupted health.

D. P. Hogshead, A.M., M.D.

West Berkeley, Cal., March 12, 1887.

SHOULD DOCTORS FURNISH MEDICINE?

To the Editor of The Medical Record.

Sir: Why should not the physicians of cities give medicine to patients themselves, instead of simply prescribing it?

I have no wish to cast reflection upon the druggists of the country, but how often are complaints made against druggists, for various reasons. How many druggists prescribe over the counter simply for the profits they make from the drugs, keeping money out of the pockets of the already poorly paid physicians, and really casting reflection upon them. For if the remedy happens to do good in a particular case, the family say, "Oh, he's as good as a doctor!" and the conclusion naturally follows that it's no great thing to be a doctor after all.

Then, again, it seems to be the fact that every drug-store is carried on in the interest of some one physician. Who has not met with some instance such as I have lately been a victim of—having a druggist tell a patient that the telephone is out of order and that he (the patient) had better get Dr. So-and-so, who is as good, if not a better, physician than Dr. M.?

I am not writing this letter for spite; but when one sees men getting rich upon the profits which legitimately belong to the physicians, when one notices the numberless small methods which are resorted to by druggists with whom one is not an especial favorite, and when one considers the army of physicians who are barely able to make a living, one wonders why physicians do not prepare and sell the remedies which they consider the patients need.

I do not do it myself, but I cannot see anything wrong about it; nothing unprofessional. Indeed, I believe it would be a good thing for the patients if doctors would prepare the remedies, because thereby many a doctor would get a familiarity with drugs which perhaps was sadly needed.

James McManus, M.D.

Brooklyn, March 19, 1887.

THE DOCTOR'S HORSE.

To the Editor of The Medical Record.

Sir: Your comments on the "Doctor's Horse," in a late issue of The Record, while very good and containing much of interest, cover hardly sufficient ground to constitute a safe guide to a young doctor who really needs experienced advice regarding this very necessary adjunct to the country doctor's armamentarium. Will you allow a word on this matter from one who is somewhat in the position of the rustic member of a nameless legislature. He had sat through a whole session without ever showing any interest in the deliberations of that body, nor having ever opened his mouth in debate; who, when a bill regarding swine was under discussion, at once became attentive, then very restless, and at last could contain himself no longer, jumped to his feet, and cried: "Mr. Speaker, you are talking about hogs; I know something about them air critturs; I was raised among um."

Having practised more or less successfully in a Western State, emigrating from New England twelve years since, and always in a country district where a good horse, in the eyes of the public, is a better recommendation to favor than a diploma and a hospital course, may I add a few "don'ts" to yours for the aid of the young doctor, who, of course, is the one who needs them.

1. Don't buy a horse till you have an office and a fair library, and can buy for cash; and then, only when you need one.

2. Don't buy a young horse, with the prevalent idea it will improve on your hands.

3. Don't buy a horse so old he can't eat; nor an odd-colored horse; nor a small horse; nor a very large horse (bay, sorrel, and brown are standard colors).

4. Don't buy a horse that has been abused, driven hard, underfed when a colt, or anything but a sound horse from six to ten years, with a Morgan strain, if possible. Soundness, gentleness, and endurance are better than speed and beauty.

5. Don't drive for "show." You will be found out if you do. Nor drive fast around town or elsewhere, unless necessary.

6. Don't draw a four-wheeled covered carriage in the country with one horse.

7. Don't swop horses and be known as a jockey.

8. Don't think more of your horse than you do of your patient, nor so much of your patient that you will kill your horse.

9. Don't care for your own horse if you can hire help; or, if you can't afford help, don't visit your patient with the clothes you harness, etc., in.

10. Don't talk *horse* to everybody, nor to anybody unless they begin it.

11. Don't buy a horse till you've tried him thoroughly.

12. Don't buy a *horse* at all; buy a mare, for various reasons not necessary here to mention.

Country Doctor.

New Instruments.

DOUBLE-CURRENT NOZZLE FOR URETHRAL IRRIGATION.

By LOUIS F. KIEFER, M.D.,

NEW YORK.

While working in the Genito-Urinary Clinic of the Roosevelt Hospital, of this city, I often found great difficulty in thoroughly irrigating the urethra (in that treatment of gonorrhœa) with the nozzles in use; sometimes almost failing to attain that object.

The bulbous nozzle, connected to but one tube, would fulfil the indication of occluding the meatus urinarius, but when the urethra was distended with the fluid it was necessary to partially remove the bulb in order to allow the fluid to escape, and if the patient was at all restless the bulb would slip away from the meatus, and it would then have to be reapplied, a process consuming time and patience; and if the meatus was very small, or the glans penis very slippery, there was often found great difficulty in keeping the bulb applied to the urethral orifice.

We then tried the ordinary straight glass tube with a smooth point; this was introduced a very short distance into the meatus, the urethra was filled with the fluid, and the tube then withdrawn; but these repeated introductions would often cause pain, it would be necessary to have several sizes of nozzles, and if, as was often found to be the case, there was a stricture very close to the meatus, irrigation with this nozzle was often found to be attended with great pain and difficulty.

It then occurred to me that these objections could be overcome by a nozzle which was bulbous, but which was provided with a tube for a return current; such an instrument I have found to fulfil all the requirements of a nozzle for this plan of treatment of gonorrhœa.

The instrument is made of hard rubber (glass having been found to be too brittle), and is about three inches in length. It consists of two tubes, one end of each being free, the other ends being united side by side in a bulbous expansion; the bore of each tube, however, remains separate, and each tube opens separately at the apex of the bulbous extremity. The bore and orifice of one tube is smaller than that of the other; the smaller will be designated the *inflow-* and the larger the *outflow-*tube.

The inflow-tube is intended to be connected to the tubing from a fountain placed at a proper elevation. The conical bulbous end is so made in order to fit the varying sizes of urethral orifices, and when once inserted into the meatus can be firmly held there without interfering with the outflow of the fluid.

The instrument is intended to be used as follows: The inflow-tube having been connected to the tubing, as stated above, and the fountain filled with the desired solution, the conical bulbous end is to be inserted into the meatus and firmly held there by one hand; the solution may now be allowed to flow through the inflow-tube, and if now the free end of the outflow-tube be closed by a finger of the disengaged hand, the medicated solution will then distend the urethra, and thus come into contact with every portion of the urethral walls. This manœuvre can be gone through with from fifteen to twenty-five times a minute, thus making it possible to thoroughly irrigate the urethra with a quart or more of medicated solution in a very short time.

The bore of the outflow-tube was made the larger in order that the urethra would be thoroughly and promptly emptied, and thus a constantly renewed application of the irrigating fluid to the urethral walls be insured.

If a cold solution is used, the danger of the fluid entering the bladder is very slight, the local effect of the cold solution being to cause a tonic contraction of the sphincter vesicæ; the fountain, however, should not be placed too high—about three feet above the level of the nozzle when in use has been found sufficient. The instrument, being made of hard rubber, can be kept in antiseptic solutions without injury, an advantageous feature which is self-evident.

To avoid using the finger to occlude the outflow-tube, I have devised an arrangement of levers so placed that when the outflow-tube is occluded the inflow-tube will be open, and *vice versa;* this, of course, is merely a refinement.

Army and Navy News.

Official List of Changes in the Stations and Duties of Officers serving in the Medical Department, United States Army, from March 27 to April 2, 1887.

PERLEY, HARRY O., Captain and Assistant Surgeon. Ordered for temporary duty at Fort Maginnis, Mon. Ter. S. O. 23, Department of the Dakota, March 18, 1887.

Official List of Changes in the Medical Corps of the United States Navy for the week ending April 2, 1887.

WAGGENER, J. R., Passed Assistant Surgeon. Commissioned a Surgeon on March 18th.

FITTS, H. B., Passed Assistant Surgeon. Ordered to the Receiving-ship Vermont.

TRACY, E. C., Assistant Surgeon. Detached from the Vermont, and ordered to the Atlanta.

HEFFINGER, A. C., Passed Assistant Surgeon. Detached from the Atlanta, and ordered on special duty in connection with construction of a hospital at Widow's Island, Me.

HAGER'S CATARRH REMEDY.—The formula recommended by Dr. Herman Hager is as follows: Of carbolic acid, 10 parts; alcohol, 10 parts; water of ammonia, 12 parts; distilled water, 20 parts. Take two-ounce wide-mouthed bottles, fill them to one-third with the above liquid; then introduce a bunch of (absorbent) cotton of sufficient size to soak up all the liquid; to be used in incipient cold in the head, coryza, chronic catarrh, etc. A stronger preparation, also recommended by Dr. Hager, is the following: Carbolic acid, 10 parts; oil of turpentine, 5 parts; water of ammonia, 12 parts; alcohol, 20 parts. To be used in the same manner as the preceding. Hager recommends those as prophylactics against diphtheria. He advises all those who handle and are about patients suffering from diphtheria or phthisis, to place a vial with this *olfactorium* to the nose when they approach the patient.—*Therapeutic Gazette.*

Medical Items.

CONTAGIOUS DISEASES—WEEKLY STATEMENT.—Report of cases and deaths from contagious diseases reported to the Sanitary Bureau, Health Department, for the week ending April 2, 1887:

	Cases.	Deaths.
Typhus fever	0	0
Typhoid fever	11	5
Scarlet fever	67	10
Cerebro-spinal meningitis	4	3
Measles	122	15
Diphtheria	84	40
Small-pox	8	2
Yellow fever	0	0

CEREBRAL ABSCESS AND ITS TREATMENT.—A discussion on the diagnosis and treatment of cerebral abscess took place at the Glasgow Medico-Chirurgical Society on February 11th and 12th, but does not appear to have added much to current knowledge. Dr. William Macewen mentioned a case of abscess in the temporo-sphenoidal lobe upon which he had operated with success. Mr. Barker, who had another successful case (with Dr. Gowers) about three months ago, is reported to have stated that nearly all intracranial abscesses originating in ear-disease were in the cerebrum, and that nine-tenths of the cerebral abscesses were in the temporo-sphenoidal lobe. Such abscesses, though not very commonly met with, are not extremely rare; for instance, Professor Greenfield said he met with about one case a year in the Edinburgh Infirmary, and Dr. Coats said that the number in Glasgow was proportionate, so that probably this operation, which appears to present no serious difficulties to the surgeon, will soon become comparatively frequent—more especially as the first five cases (treated by Barker and Gowers, Schondorff, Trückenbrod, Greenfield, and Macewen) have been so successful. Altogether, there seem to have been twenty cases recently in which the cerebrum has been incised or partially excised, with three deaths, two from shock and one from septicæmia.—Cor. *Phila. Med. Times.*

BILE-SALTS AND COD-LIVER OIL INUNCTIONS.—Dr. H. A. Hare, of Philadelphia, finds that the addition of bile-salts doubles the rapidity with which cod-liver oil can be rubbed into the skin.—*Boston Med. and Surg. Jour.*

A CURE FOR WARTS.—Take fifteen grains of corrosive sublimate and dissolve in one ounce of collodion. Brush the warts carefully once a day with this solution. This remedy is more efficacious and more convenient than other recommended procedures.—*Zeitschrift d. Oester. Apotheker-V.*

ANTISEPTIC COLLODION.—The *Journal de Médecine* of December 26th contains an account of a new kind of "collodion," which is antiseptic and promotes cicatrization. It does not cause inflammation, and may be substituted for collodion made from gun-cotton, in the treatment of wounds and bruises. Like traumaticine, it is efficacious in relieving neuralgic pains and acute or chronic rheumatism. The affected parts should be sponged with it every twenty-four hours, and in serious cases every six hours. If strips of linen or silk be soaked in this collodion, an excellent sticking-plaster is obtained, which quite equals English court-plaster. The following is the formula: Mastic in globules, 3 grammes; balsam of Peru, 1 gramme; narcotine, 1 gramme. Each ingredient should be ground separately, and 5 grammes of chloroform added thereto.

TREATMENT OF BOILS BY INJECTIONS OF CARBOLIC ACID.—Dr. Bidder, of Paris, has described a method of treating furuncles by parenchymatous injections of carbolic acid. If the boil is a small one, he gives one injection of a few drops of a solution of carbolic acid (two per cent.); if it is of medium size, two injections are given, the half or the whole of a Pravaz-syringeful of the solution being used on each occasion. In the case of large furuncles, for example, half the size of a man's hand, Dr. Bidder injects at four different spots the contents of four Pravaz syringes half or wholly filled with a solution of two per cent. of carbolic acid. These injections are given only once. This treatment is strikingly successful. There is some smarting at the seat of injection at first, but the pain soon disappears, and the next day there is a marked improvement in the patient's condition. The inflammatory swelling subsides very quickly, and in eight or ten days even the largest furuncle is dispersed. By this plan no unsightly scars are left, a circumstance which in many cases is of considerable importance. The success of the treatment is probably to be accounted for by the fact that either the microbes which cause the disease are killed, or the medium in which they flourish is destroyed.—*British Medical Journal.*

AN INGENIOUS TEST FOR VISUAL MALINGERING.—In a large factory a workman in wielding his hammer carelessly allowed it to slip from his hand. It flew half across the room, striking a workman in the left eye. The man brought suit in the courts, and although an eminent oculist, after an examination, declared that no apparent injury could be detected, claimed that his eyesight was destroyed, and refused all offers of compromise. As the law requires owners of factories to pay all claims for damages resulting from injury during work, the owner, though confident that the man was shamming, had about made up his mind that he would be compelled to pay the claim. On the day of the trial a further test was made. The oculist for the defence had a pair of glasses made, the right eye being of red and the left eye of ordinary glass. He brought also a black card with a sentence written on it in green ink. The plaintiff was ordered to put on the glasses and read the sentence, which he readily did, thus proving himself a perjurer, as the sound right eye, being fitted with a red glass, could not distinguish the writing—the combination of green and red producing black, which on a black ground was, of course, not visible—and the left eye, which he claimed was blind, was the one with which the reading had to be done.

LOVE IN CAPSULES.—A Kentucky medical contemporary publishes a love-song in its pharmaceutical department.

A HORN GROWING FROM THE HUMAN HEAD.—An interesting addition has just been made to the museum of the Hôpital Saint Louis, in Paris, in the shape of a strong and solid horn, which has been surgically removed from the head of a woman residing at Hyères, in the Riviera. This appendage grew from the scalp, was twenty-one centimetres (eight inches) long, and in appearance and consistence resembles the horn of a goat. This deformity is rare, but not so much so as is generally imagined. Cloquet, the eminent anatomist, records a case, and Demarquay has collected fifty-nine cases. The late Sir Erasmus Wilson gives a very complete account of the deformity in the twenty-seventh volume of the "Transactions of the Royal Medical and Chirurgical Society." Out of 90 cases mentioned therein, 44 were in females, 39 in males, and the sex of 7 is unrecorded. In the *New York Medical Repository* of 1820 is described the case of a man from whose forehead grew a horn which had three branches and was fourteen inches in circumference. These growths have their origin in a diseased sebaceous gland, and their treatment is removal. It is necessary to destroy all remains of the offending sebaceous gland, or recurrence may happen.

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Original Articles.

A CASE OF ACUTE AND FATAL TUBERCULOSIS OF THE LYMPHATIC GLANDS.

BY FRANCIS DELAFIELD, M.D.,

NEW YORK.

HELEN R——, aged twenty-three, England, domestic, was admitted to St. Luke's Hospital, under the care of Dr. A. B. Ball, on October 18, 1886. She had been in good health until two weeks before her admission to the hospital. At that time she was attacked with headache, pain in the back, malaise, diarrhœa, occasional vomiting, and a febrile movement. For the first week she continued up and about, during the second week she was in bed. It was supposed that she had typhoid fever.

When admitted to St. Luke's Hospital her temperature was 99° F., pulse 84, respiration 23. The urine contained no albumen, sugar, or casts. There was no diarrhœa. The spleen was slightly enlarged, the liver was of normal size. There were no physical signs of disease of the heart or lungs, except a few coarse râles over the lower part of both lungs. The patient's appearance was cheerful, and so unlike that of typhoid fever that in the absence of characteristic symptoms the disease was excluded from the diagnosis.

The only change for the next four days was a gradual rise of temperature from 99° to 102° F.

On October 22d, for the first time, it was noticed that there was an enlarged lymphatic gland on the right side of the neck near the angle of the jaw. This gland was somewhat larger than a hickory nut, hard, tender, and freely movable. She said that it had appeared at the outset of her illness, and since then had become larger. No cause for this enlarged gland could be discovered in a primary lesion elsewhere. The axillary and inguinal glands were not enlarged. After this time the temperature ranged from 102° to 104° F. The enlargement of the glands in the neck became more marked, and extended down to the clavicle.

There were no physical or rational signs of disease of the lungs.

The patient lost flesh and strength, and became anæmic. The red blood-cells were 3,720,000 to the cubic centimetre, the white blood-cells were in the proportion of 1.832, the hæmoglobin was forty-eight per cent.

By December 4th an enlarged gland had appeared in the right axilla, and the glands in both groins had begun to enlarge.

On December 5th the eyes were examined by Dr. Loring. In the right eye the arterial and venous blood was lighter colored than usual, the veins were dilated. Above and to the outer side of the macula was a small hemorrhagic spot, surrounded by œdema, and several spots of exudation in the retina. At another part of the retina was a white spot, as large as a pin's-head, with a foggy appearance; and near this the retina had a striped, granular, pepper-and-salt look. All the changes were in the neighborhood of vessels, and somewhat resembled the retinitis of leukæmia, or Bright's disease.

The left eye was in much the same condition as the right.

On December 7th a sharp diarrhœa set in, with a fall of temperature nearer to the normal. The patient became extremely prostrated, looked as if she would die, and was removed from the hospital by her friends. On January 8, 1887, Dr. Ball saw the patient at her home, in consultation with her physician, Dr. S. M. Swift. Since she had left the hospital there had been a constant elevation of temperature, but with lower ranges. Her general condition had somewhat improved.

While the patient was under the care of Dr. Ball, at St. Luke's Hospital, she was seen by all the consulting and attending staff, and the results of their study of the case are stated by Dr. Ball as follows:

"After the first few days it was evident that she was suffering from an infective process of some kind. Typhoid fever was early excluded. When the swollen and tender gland at the angle of the jaw was discovered it became a question whether such a prolonged and marked constitutional disturbance could arise from a simple adenitis, inasmuch as no other lesion could be detected. She was seen by three of the surgical staff, two of whom thought the symptoms might be accounted for by adenitis, while the third doubted this possibility, but had no other explanation to offer. This difference of opinion is mentioned simply to show the difficulties which attended the diagnosis from the start. A few days later the continued high temperature, and the evident though inconsiderable enlargement of the spleen, led to the suspicion of a general tubercular infection; but although careful examinations were made repeatedly for signs of its existence, no satisfactory evidence was obtained. When, five weeks after admission, the lower cervical and supra-clavicular glands began to enlarge, it became a question whether we were dealing with a tuberculosis limited, for the most part or entirely, to the glandular system, or with an acute form of Hodgkin's disease. At this time the physical signs at the apices of the lungs were but slightly marked, and could be explained, it seemed to me, by enlargement of the bronchial glands. My reasons for this opinion were that the patient was entirely free from cough, there was no evidence of a general tuberculous infiltration of the lungs, and the fact that the local signs had not made their appearance until after infection of the lower cervical and supra-clavicular glands had taken place, with a probable extension of the process to the bronchial glands. Assuming the correctness of the supposition that the morbid process was limited to the glandular system, the chances were in favor of a lymphomatous or lympho-sarcomatous affection rather than a tuberculosis, on account of the greater rarity of a tuberculosis thus limited. To be sure, Hodgkin's disease seldom runs its course with such rapidity and such continued high temperature, but a considerable number of cases so characterized have been reported by Gowers, Hilton-Fagge, and other writers. Splenic enlargement occurs in both diseases, and has no value for the purpose of differential diagnosis between them. In reviewing the case it seems to me highly probable that infection of the spleen, and perhaps of the deep abdominal glands, took place very early, and were really the cause of the fever which ushered in the illness. Indeed, I am not sure that the disease did not start in this locality rather than in the cervical gland, which seemed to us the primary focus.

"In cases presenting similar difficulties of diagnosis the nature of the disease may be cleared up by a simple procedure suggested to me in the present case by Dr. Abbe—viz., to remove a portion or the whole of an infected gland and examine for tubercle bacilli. The suggestion

was not carried out with my patient on account of the serious character of her illness and my reluctance to add to her discomfort without some likelihood that the information obtained could be utilized in the treatment."

On January 24, 1887, the patient was admitted to the Roosevelt Hospital under my care. She was feeble and anæmic, her eyesight was poor, her tongue was clean and moist, her appetite was poor, there was constant pain in the abdomen, and the bowels were loose. The urine was acid; specific gravity, 1.024; a trace of albumen, no sugar, no casts. Temperature, 101.8° to 103.4°; pulse, 120 to 130; respiration, 32 to 36.

Over the lungs the percussion note was normal; there was tubular breathing over both lungs, such as is usually due to compression or narrowing of the trachea or large bronchi. The heart was normal, except for a systolic murmur in the second left interspace. The liver and spleen were of normal size, and no tumor could be felt in the abdomen.

In the right side of the neck, extending from the angle of the jaw to below the clavicle, was a mass of lymphatic glands—hard, matted together, and adherent to the surrounding parts. There were a few glands, very slightly swollen, in the right axilla and groin. After her admission the patient's temperature was between 103° and 104°, with a regular afternoon rise. The pulse was from 120 to 130, and the respirations from 30 to 40.

She lay quietly in bed in a somewhat apathetic condition, from day to day looking rather worse and more emaciated, then became mildly delirious, and on February 7th, at 4.50 A.M., died rather suddenly, having looked on February 6th as if she would still live for some time.

I made the autopsy on February 7th, at 2.40 P.M.

The brain and its membranes were normal, except for some increase of serum in the lateral ventricles.

The lungs were congested and œdematous. In both lower lobes were considerable areas of red hepatization and a very few miliary tubercles.

In the areas of red hepatization the air-spaces contained pus, fibrine, red blood-cells, and epithelial cells. The miliary tubercles were composed of infiltrations of round cells.

The heart was normal.

The liver weighed five pounds, contained but little blood, and the hepatic cells were largely infiltrated with fat.

The spleen was slightly enlarged, and contained a large number of white nodules from the size of a pin's-head to that of a pea. The nodules had for the most part undergone cheesy degeneration, and showed no structure except a few round cells at their peripheries. They contained tubercle bacilli.

The stomach was empty; its glandular coat was well preserved and normal.

The pancreas was unchanged.

The small intestine and the colon were normal.

The mesenteric glands were much enlarged. Some of them were calcified, others had undergone cheesy degeneration and softening. In none of them was there any well-marked tubercle tissue, as the degenerative changes were extensive, but tubercle bacilli were found in the cheesy masses.

The kidneys were a little enlarged. The epithelial cells of the convoluted tubes were slightly swollen.

The thoracic duct was unchanged. In the right side of the neck was a large mass of lymphatic glands, extending from the angle of the jaw downward below the clavicle, and inward toward the trachea. Most of these enlarged glands had undergone cheesy degeneration at their centres, and some had softened. There was no well-marked tubercle tissue, but tubercle bacilli were present in considerable numbers.

The patient, apparently, had suffered at some former period from an attack of tubercular inflammation of the mesenteric glands, from which she recovered, the glands undergoing calcification. If any ulcers existed in the small intestine at that time, they left no cicatrices behind.

Her present illness began with a tubercular inflammation of the mesenteric glands, again without ulcers in the intestines. After a time the cervical glands became inflamed in the same way, and a few miliary tubercles were formed in the lungs. From the beginning to the end of this fatal illness the patient always looked as if she were suffering from the poison of some general disease, and not from interference with the functions of any part of the body; and after death none of the viscera were so altered as to render life in danger, nor were the anæmia or the emaciation so marked as to account for death.

The case seemed to be a well-marked example of tubercular inflammation of the mesenteric and cervical glands, which behaved like a general rather than like a localized tuberculosis.

Tubercular adenitis, involving by preference the cervical, bronchial, and mesenteric glands, is usually a secondary inflammation to lesions of the skin, lungs, and intestines. It behaves like a localized tubercular inflammation, but occasionally becomes the starting-point of a general tuberculosis.

Tubercular adenitis of a primary character, and behaving like a general tuberculosis, is much less common.

Some cases of this kind are described by the older authors under the name of acute scrofula.

Others have been confounded with the morbid condition known under the names of Hodgkin's disease, pseudo-leukæmia, adenia, anæmia lymphatica, lymphadenoma, malignant lymphoma.

A few cases similar to the one here reported have been described by Dr. Hilton-Fagge[1] and Dr. Pye-Smith.[2]

ANTIFEBRIN IN THE TREATMENT OF PHTHISIS.

By CHARLES M. CAULDWELL, M.D.,

VISITING PHYSICIAN TO ST. JOSEPH'S HOSPITAL, NEW YORK.

Ever since Cahn and Hepp introduced antifebrin to the notice of the medical world, the drug has been rapidly gaining favor in the eyes of German, English, and American observers. Almost every week the European medical journals publish the commendatory opinions of one or more practical investigators. In many of the New York hospitals antifebrin is already accepted as the safest and most reliable drug with which to reduce temperature in *acute* febrile diseases.

Thus, while both hospital and private practice furnish abundant evidence of its power in such diseases as typhoid fever, pneumonia, and acute rheumatism, yet the fact that it is capable of producing most desirable results in certain forms of phthisis does not seem to be appreciated.

Last fall I was surprised to see moderate doses of antifebrin quickly control a most distressing "hectic fever," after quinine, antipyrine, etc., had completely failed. Since that time I have employed the drug in the treatment of thirty phthisical patients, in whom persistent fever, or chills and fever have been prominent symptoms. The results have been unexpectedly satisfactory both to me and to the patients.

The cases for which the drug was prescribed differed widely in age, habits, and social position, some being private patients while others were hospital inmates. The sexes were about equally represented. Of the thirty patients, nine were suffering from slight or moderate consolidation in *one* lung only. Eleven had more extensive disease, namely, considerable patches of consolidation, with or without spots of softening. The ten remaining cases were pitiable examples of the cavernous stage of phthisis.

[1] Path. Trans., xxv., 72 and 235.

[2] Ibid., xxvi., 202.

In cases of the first class (those having moderate consolidation in one lung only) antifebrin immediately produced marked improvement. The temperature became normal, the pulse was less rapid and stronger, the tongue cleared, the appetite improved notably, dyspeptic symptoms disappeared, "chest pains" and nervous sensations ceased to annoy, the secretion of the urine increased, and the patient acted and appeared greatly benefited.

The following outline will fairly illustrate the effect of the remedy upon the temperature, etc.; also the dose given in cases of the first class.

Case V. was a young lady, twenty years of age, who had had phthisical symptoms for eight months. At the time of coming under observation there was a moderate amount of consolidation at the apex of the right lung. The patient had been abroad in search of health for six months, but had returned unimproved. During the month which preceded the antifebrin treatment her prominent symptoms were daily fever, dyspepsia, and night-sweats. The girl was thin, anæmic, and each afternoon had a brilliant hectic flush, especially upon the right cheek. The day before the drug was commenced the record stood as follows: At 8 A.M., temperature 101¼°, pulse 104; 1 P.M., temperature 103°, pulse 122; 8 P.M., temperature 101¾°, pulse 110. A single dose of castor-oil was given. Then seven grains of antifebrin, four times a day, was prescribed. Each dose was taken in an ounce of champagne shortly after eating. This treatment was continued for two weeks, at the end of which time the patient was sent South. During these two weeks the girl's temperature remained below 100°, pulse below 90. The symptoms of indigestion subsided, appetite returned, and there was an increase of five pounds in bodily weight. This was more than had been gained during her whole European trip.

In cases of the second class, including those whose disease had advanced sufficiently to produce either extensive consolidation or spots of softening, antifebrin kept the temperature normal, slowed the pulse, improved digestion and appetite, and diminished restlessness and insomnia. In several of these cases free sweating was produced when this occurred; it was obviated by the addition of agaricin to the treatment. In two cases blueness of the lips and finger-nails was noticed. This was doubtless due to the antifebrin. The cyanosis was unaccompanied by any discomfort, both patients declaring that they felt "all right" at the time and afterward.

The following notes will give a correct idea of the doses given and the amount of relief obtained from the remedy in this second class of cases, also the symptoms which the drug did *not* influence favorably.

Case XVII. was a young man, aged twenty-three, who had been losing flesh and strength for five months. He had had severe cough and occasional small hemorrhages for three months before I saw him. At the time of coming under observation there was a point of softening in the upper part of the left lung. Hectic fever, night-sweats, loss of appetite, racking cough, and dyspnœa were the troublesome symptoms. The temperature was taken for a week, and found to reach 103° and over in the afternoons. Antifebrin was ordered—ten grains at 8 A.M. and at 4 P.M.—to be taken in a little whiskey and ginger-ale. An hour before bedtime a pill of agaricin (gr. ½) was given to prevent "sleep-sweating." The following is part of the temperature record:

December 14, A.M., 102¼°; P.M., 103¾°. Night-sweat. Antifebrin commenced.
December 15, A.M., 102½°; P.M., 102°. Night-sweat.
December 16, A.M., 100°; P.M., 98⅘. None.
December 17, A.M., 98½°; P.M., 98⅘°. None.
December 18, A.M., 98⅘°; P.M., 98⅗°. None.
December 19, A.M., 99°; P.M., 99⅕°. None.
December 20, A.M., 98½°; P.M., 98⅘. None.

The treatment was continued for three weeks. During that time the fever and sweating were entirely controlled. Appetite returned, but neither cough nor dyspnœa were modified, although the young man improved in flesh and strength.

The third class of cases in which antifebrin was tried consisted of patients in whom both lungs were extensively diseased, and from whose general condition it was only too evident that they were soon to journey to "that far country from whose bourne no traveller returns."

Even in such advanced cases the drug afforded much comfort by controlling the septic chills and fever, and quieting the restlessness. In no case did the remedy fail to check the distressing chills at once.

The following case will illustrate this point:

Case XXVIII. was a man, twenty-nine years of age, who had been ill with consumption for a year and a half. On admission to the hospital he had advanced diseases in both lungs, was bed-ridden and emaciated to an extreme degree. Each morning at about ten o'clock he had a chill sufficiently severe to shake the bed and cause his teeth to chatter most vigorously. Each chill was followed by fever and a drenching sweat. Anorexia, constant thirst, severe cough, dyspnœa, chest pains, attacks of syncope, and mild delirium added to his distressing condition.

Capsules containing ten grains of antifebrin and one-fifth of a grain of agaricin were ordered to be taken daily, at 9 A.M. and 9 P.M. A little aromatic spirits of ammonia was used as the accompanying stimulant. After the first day the chills never returned; the temperature remained below 100°, the sweating was less profuse, the mind became clear, and the extreme restlessness disappeared. The treatment was continued for two months, during which time it produced no unpleasant effects, and greatly modified the poor fellow's sufferings.

In regard to the doses used I believe mine were a little larger than are generally prescribed. From twenty to thirty grains were given in twenty-four hours. After the chills and fever had been controlled for a few days, the doses were reduced one-half, and continued for a variable time before entirely suspending treatment.

It was the rule in all cases to give some form of stimulant with each dose of antifebrin, in order to obviate any depression which might possibly be produced. It is very doubtful if this is necessary, however.

The drug is apparently an antiseptic. Lépine thinks that its action is due to aniline, which, being set free from the antifebrin, exerts its antiseptic power.

My experience with the drug in the treatment of consumption leads me to the following conclusions:

1. Antifebrin is the best drug with which to control the chill and fever of phthisis. With it we can at once check these depressing symptoms.
2. It does not produce the unpleasant effects of quinine, salicylic acid, antipyrine, thallin, or resorcin.
3. Chills, collapse, or semi-intoxication are not caused by it.
4. In many patients it induces sweating.
5. It diminishes the frequency of the pulse, and usually strengthens the heart's action.
6. Occasionally it produces cyanosis. This happened but twice in thirty cases.
7. It does not interfere with digestion; but, on the contrary, increases the appetite.
8. Even when the stomach is in an irritable condition it can be retained.
9. It increases the secretion of urine in the majority of instances.
10. It tends to quiet the nervous system, and produce a feeling of "well-being" in the patients.

71 West Fifty-fifth Street.

Buffalo Claims a Birth-rate of 31.5 per 1,000 in 1886; Rochester, which is very near, has a rate of 16.66 per 1,000. The Buffalo *Medical and Surgical Journal* says that there is some grave defect either in the vital statistics or in the fecundity of Rochester people.

A CASE OF PROGRESSIVE FACIAL HEMI-ATROPHY.[1]

By L. PUTZEL, M.D.,

NEW YORK.

The following is the history of the patient who forms the subject of my paper this evening:

Francis F——, aged twenty-seven, was a farm-hand until a few months ago, parents living and healthy, had nine brothers and sisters (six died soon after birth), three living ones are healthy. Father has a nervous disposition; mother suffers from some sort of colic attacks (?) on getting excited; patient's uncles are quick and excitable.

Patient had measles at the age of ten, but otherwise always in good health. Very temperate as regards drink, absolutely continent in his sexual relations.

Five or six years ago he had catarrh of the left side of the nose, which he used to blow with extreme violence in order to dislodge clumps of inspissated mucus. The nasal catarrh has disappeared almost entirely. Five years ago he began to notice a slight depression just below the left eye, and this kept moving slowly downward. He is positive that it was unattended by discoloration of the skin.

Present condition—appearance of the face.—The left eyebrow is considerably higher at the middle of the arch than the right brow. The left eye is somewhat sunken, and looks and feels a little smaller than the right; the finger can be pressed into the left orbit more deeply than into the right. The upper part of the superior maxilla and the anterior processes of the malar bone are considerably depressed, the normal convexity of the right side in this locality being replaced by a concavity. The left nostril is a trifle higher than the right. In repose a deep furrow is observed to run along the left side of the face from the anterior part of the malar bone downward, and outward to about two inches from the chin. There appears to be a slight depression over the left temporal muscle. The integument of the left side of the face, particularly over the malar bone, is thinner than on the right side; folds of skin, when pinched up between the fingers, are decidedly thinner than on the opposite side, and cannot be removed so far from the underlying bones (atrophy of the subcutaneous tissue). On introducing the finger into the mouth, the left masseter is found to be slightly smaller than the right, and does not contract quite so vigorously.

The patient can move the facial muscles of both sides with unusual facility, but on the left side violent contraction of the muscles is attended with the production of three broad, thick transverse folds, running from the inner angle of the eye across the upper part of the nose; these are barely indicated on the right side. The electrical muscular reactions are equal on the two sides, but there is perhaps a slight diminution of the faradic excitability of the left lev. labii sup. alæque nasi.

Sensation is normal, but the patient has noticed a slight feeling of numbness in the depression for the last two years. He has never suffered from pain in the affected region. He states that the cutaneous secretions are alike on the two sides, and no difference is noticeable in the skin.

The tongue and buccal cavity are normal in all respects, and nothing is noticeable about the special senses. According to the patient, the atrophy has been progressing slowly since the inception of the malady.

Remarks.—Progressive facial hemiatrophy is a comparatively rare disease. Probably about seventy cases have been hitherto reported. My own case presents a peculiarity which is worthy of mention. Most of the reported cases began with spots of pigmentation on the affected skin; whitish, brownish, or yellowish patches, and changes in the hairs were observed in quite a considerable proportion. These are absent in my case. A certain number were associated with atrophy of the corresponding side of the palate and tongue. Absence of the sebaceous and sudoriparous secretions has also been noticed, and even oculo-pupillary symptoms have been mentioned. The power of blushing has sometimes been lost on the affected side. As a rule, the special senses have been normal, but in a few cases impairment of hearing and taste has been observed.

Wolff reports a unique case of bilateral progressive facial atrophy. In this case the atrophy developed on the two sides after a long interval. Wolff attributed the atrophy of the right side to scarlatina, followed by chronic tonsillitis, and which, in his opinion, gave rise to a chronic neuritis. The changes on the left side began after typhoid fever, and Wolff is also inclined to attribute these to an infectious neuritis.

Nicaise reports a case of median facial atrophy, affecting the median part of the forehead. It began at the age of twenty, in the third month of pregnancy. It began spontaneously, accompanied by violent headache. The skin was dry and thin, and applied directly to the bone, but not adherent; the hairs were scanty, and had turned white. The muscles were also atrophied.

Henschen reports a case which presents an interesting etiology. The patient, aged forty-six, at the age of fourteen sprained the left ankle. Six months later atrophy began in the left lower and upper limbs and the left side of the trunk, and later extended to the left side of the face. The patient was melancholic for a time at the age of nineteen, and had a relapse of melancholia two years ago, which has now disappeared. The atrophy affected the entire left side of the face (bones, etc.). The left side of the trunk was especially atrophied, first, from the fifth to seventh intercostal spaces; secondly, from the tenth to eleventh ribs; thirdly, at the crista ilii. The entire left arm was atrophic, also the left leg and thigh. Frequent fibrillary twitchings in atrophic muscles; two foci of ossification in the quadriceps femoris. Sensibility intact.

Virchow has also described a case which was complicated with atrophy in the distribution of the scapular cutaneous nerves, and the musculo-spinal nerve of the same side of the body.

[1] Read before the Section on Neurology of the New York Academy of Medicine, Friday, December 10, 1886.

Mendel reports a case in a monomaniac which was associated with hemiatrophy of the tongue and the corresponding side of the body.

In Axmann and Hueter's case the patient had suffered, since the age of seven, from irregular spastic contractions of the muscles of mastication on the left side (motor branch of the trigeminus). These spasms were associated with increased sensibility in the distribution of the first and second branches of the trigeminus.

Seeligmueller reports the case of a blacksmith who received a violent blow in the left supraclavicular fossa. In addition to the symptoms of irritation of the sympathetic (dilatation of the left pupil, exophthalmus, pallor, and diminished temperature on the injured side), the left cheek underwent such marked atrophy in the course of a week as to be noticed even by the patient. A somewhat similar case is reported by Brunner.

Pathology.—We have been unable to find any records of a post-mortem examination in this disease, so that opinions with regard to its pathology must be purely theoretical. The theory of its sympathetic origin has met with some favor, but utterly fails, in our opinion, to explain the phenomena of the disease in the large majority of cases. With few exceptions the vaso-motor symptoms are either entirely absent or very slightly marked. It is true that atrophy of the face has been observed, as, for example, in Seeligmueller's case, in a few instances associated with the classical symptoms of paralysis or irritation of the cervical sympathetic, and perhaps the atrophic changes stand in a certain causal relation to the vaso-motor disturbances; but such cases should not be included under the head of progressive facial hemiatrophy. This condition is, then, merely an accident in the disease of the sympathetic.

A number of facts seem to us to point to the origin of the disease in trophic fibres of the trigeminus nerve, or in its nucleus of origin. Nicaise's case points very decidedly in this direction. In this instance the history is identical with that of trigeminal neuralgia. It is true that hemiatrophy is rarely associated with purely neuralgic symptoms, but, on the other hand, neuralgia is rarely associated with atrophic symptoms. When it is so complicated it is indicative of an implication of the trophic fibres of the nerve.

Axmann and Hueter's case is also important in this direction. In this case the disease began with evidences of irritation of the motor root of the trigeminus, complicated with an affection of the first and second branches of the nerve. The fact that the disease has often been observed after injury to the face also possesses a similar significance.

But whether the lesion is to be located in the peripheral branches of the nerve, the Gasserian ganglion, or its nuclei of origin, is beyond our knowledge. Virchow believes that in many cases a primary inflammatory affection of the throat or face travels along the nerve-fibres to the ganglion.

According to Lande, the hemiatrophy is the result of primary atrophy of the subcutaneous cellular and fatty tissue, exclusive of the elastic fibres. He believes that the elastic fibres draw the skin forcibly against the subjacent bones, and by compressing the blood-vessels of the skin and periosteum in this manner, cause anæmia and discoloration of the integument, atrophy of the bones, and also of the sebaceous glands and hair-follicles.

The disease can hardly be mistaken for any other, except, perhaps, for congenital asymmetry of the face. This sometimes is very marked and produces considerable deformity, but the imperfect development is confined mainly to the bones, which it affects more uniformly than in progressive facial hemiatrophy, and in addition the asymmetry is noticeable from early infancy. Such cases are seen most frequently in idiotic children.

A NEW JAPANESE PHARMACOPŒIA has recently been issued. It is published in Latin as well as Japanese.

THE RELATION BETWEEN DRINKING-WATER AND TYPHOID FEVER.[1]

BY DOWLING BENJAMIN, M.D.,

CAMDEN, N. J.

TYPHOID fever is caused by a peculiar and specific poison. I do not know that this is denied to-day by anyone competent, from careful study and thorough investigation, to give trustworthy information on this subject. Does it arise *de novo?* All the investigations that I have made have proved to my mind that the poison which produces typhoid fever cannot be generated spontaneously, but must come from another source. I am aware that there are some gentlemen who even now believe that it originates *de novo*, and they give the examples and cases which prove to their minds the truth of such belief. But the cases cited as proofs are generally defective, and do not exclude the possibility of infection from a preceding case. Take, for example, the four instances given by Dr. R. W. Hutchinson, of Queens County, N. Y., published as late as October 9, 1886, in the *Medical and Surgical Reporter.*

I will not occupy your time by criticising all these cases, but will select the fourth, which seems to be the strongest, as follows:

"IV. In the last part of August, 1885, a party of young folks, numbering some fifteen, started out to spend the day on the banks of a creek near East Rockaway. They carried no water with them, but relied on securing a supply from a sunken barrel, near the creek, that had been used for that purpose for a number of years. On this occasion it was noticed that the water smelled and tasted badly, so much so that some of the party refused to drink it. Exactly one week from the day of the picnic most of them who had drunk the water, some nine in number, were stricken down abruptly with typhoid fever. I regret very much that I did not have the opportunity of examining the barrel, with its contents, immediately after the picnic, as I am now left in doubt as to the cause of the decomposition in the water. Shortly after the outbreak of the fever some person, fearing that others might drink, pulled up the barrel and destroyed the well. But from a number of reasons I can positively say that there was no possibility of the water being contaminated with the fecal matter of a patient suffering from typhoid fever, which is the recognized way of communicating the disease; and if the germs of the disease did not originate *de novo* in the well-water, I ask the question, Where did they come from?"

You see he gives no reason why the well could not be contaminated with typhoid fever, though he says he has a number of them—yet he says he had no opportunity of examining the barrel, nor its contents; but he *heard* some of the party say that the water tasted and smelled badly. Notice that in less than seven days most of the party of nine who drank of the water were suddenly stricken down. This fact, in itself, might occasion some doubt of the fever being a true typhoid, as the incubation-period of typhoid fever is usually longer, though there are instances on record which would have a tendency to show that typhoid fever may occur with a shorter incubation-period than two weeks. Two weeks, however, is about the usual time.

What a blessing it might have been if the doctor had only told us the precious little secret of how he knew that no one had been in that vicinity, that his fecal matter might have affected the well.

Then take the cases cited by the illustrious Morchison, who has done so much for the thermometry of typhoid fever, but who has, perhaps, led astray more students of the origin of the poison than any other man. None of his cases are, in my opinion, conclusive, and this opinion is sustained, also, by the opinion of Dr. J.

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[1] Read at the Twelfth Annual Meeting of the New Jersey Sanitary Association, Saturday, November 20, 1886.

H. Hutchinson, of Pennsylvania, who says, in an article on this subject, that the cases referred to are by no means convincing (see p. 256, "System of Medicine by American Authors," just published).

A case put forward by the advocates of the spontaneous-origin theory, as one of their strongest, is that reported by R. Bruce Lowe, Medical Officer of Health, Holmesley, Yorkshire, published in the *British Medical Journal* in 1880. "It occurred," he says, "in a lad who had not been away from home for months. No stranger had visited the house, and there was no fever in the district." But Mr. Lowe admits there was a case before, only eight months past, and only eight miles distant, and he does not prove there was no possibility of infection, either by domestic animals or by streams of water. It is a well-known fact that, when the great forests of *pine* are cut off the land in the northern part of the United States, there comes up a thick growth of *oak*-timber immediately succeeding; and the common opinion of people who notice this strange phenomenon is, that the little *oak-plants originate spontaneously* in the soil. I think you will hardly believe this correct; but the same agencies that sowed the original oak-seeds in the forest, it must be admitted, are fully competent to sow the seeds of typhoid fever in unexpected places occasionally. The man who starts out, in this present age of scientific research, to prove that typhoid fever originates *de novo* assumes a greater task than Hercules.

No combination, either of filth, fecal matter, or sewer-gas, has ever yet been discovered that will produce the disease.

What are the physical characteristics of the virus of typhoid fever? Is this virus a liquid, a solid, or a gas? Evidently it is matter of some kind. Inorganic matter may be either solid, liquid, or gas; organized matter is never liquid, never gas. We conclude it is not a gas for the following reasons:

First, the gas has not been isolated.

Second, it would be more apt to go through the air than otherwise, which is not the case with this virus.

Third, all known gases that affect the system profoundly, if they affect it at all, do so at once or in a few minutes after their reception into the system.

Can a dose of carbonic-acid gas, ammonia-gas, illuminating-gas, or any other poisonous gas, be taken and lie in the system for from two to six weeks, and then begin to develop a train of trouble, a uniform succession of symptoms, like typhoid fever, or small-pox, or any other of the zymotic diseases? Never. Is it a liquid, this virus? The same objections apply to this theory that apply to the theory of its being a gas. Is it composed of solid particles? If so, these particles must be of nearly the same specific gravity as water. There is no evidence to the contrary, at any rate, and these solid particles must be very small indeed, for water known to contain typhoid-fever poison is often apparently clear and bright. Filters do not seem capable of sieving out these particles, these poisonous particles, and this poisonous matter. At least water has been filtered through ten and even one hundred feet of sand and earth, coming out clear, but still bearing poison in sufficient quantities to produce fever and cause death. So far as is at present known the poison has not been filtered out of the water by any kind of filter. This would lead us to think it was really dissolved in the water, but for the fact that a system of very fine filtration has not been tried upon suspected water, and then the water given to persons to drink, to see if the disease would be produced by it. There is no case on record of any person ever having taken the disease from water that has been boiled, thus showing that, as far as known, the boiling-temperature destroys the poison.

The theory that the poison of typhoid is an organized poison, or germ, or bacillus, seems to explain its action more completely than any other. This phase of the subject was carefully discussed, and its progress given at length, by me in an essay written in 1876, and published in *The Country Practitioner*, vol. ii., Nos. 6 and 7. Whatever may be considered the nature of this virus, the fact *that water is its principal distributer is certain.* Indeed, a careful study of the cases and statistics that I have examined seems conclusive that at least ninety-five per cent. of the cases of typhoid fever come directly from the water. The poison which produces this disease does not go through the air. All physicians now permit people to go into the sick-room where this disease exists. Visitors, and those who wait on the patients, do not take the disease. The washer-woman has been known, in rare instances, to take the disease from the water containing the soiled linen, which has infected her hands and gotten into the mouth and absorbents. The infected wash-water is very often thrown on the ground near a well, or into the sewer, with the more poisonous dejecta. I have seen two cases that occurred among sailors who drank water from the Delaware River opposite the Philadelphia sewers.

There is one instance[1] where it has also been shown that cattle have been afflicted with this disease; but in tracing the disease still further back, it was found that the cattle caught the disease from drinking infected water, and thus the milk-supply has also been known to become affected. So the more we investigate the subject the more strikingly the fact stands out that water is the main habitat of the poison. Several facts show, also, that when water contains a little organic matter the virus will be active for at least a year, in still water, and very probably for a number of years, as some of the cases cited prove.

The ways in which a well, or a spring or stream, may become infected are so numerous and hard to trace that sometimes they defy detection. For instance, a man may leave the city, where typhoid prevails more or less at the time, and be either in the first stage of the disease in a slight form, or convalescing, or be a walking case, perhaps not even knowing what is the matter with himself, getting out of his carriage or a railroad-car, or takes his gun for a few hours' recreation, and, as it so often happens, is seized with a desire to evacuate the bowels, and this may take place in the vicinity of a spring or stream of water, whence will thus start up one or more cases of typhoid fever, and the manner in which that water became infected forever remain in doubt and a mystery. Even the persons living in that locality may not know of anything of the kind, or they may have known of the presence of such a person and may have forgotten it.

Recent investigations show the intimate relations of this disease to drinking-water to be so close and so constant that it is hardly ever worth while to think of any other source of the contagion.

One of the most remarkably clear examples of this relation of drinking-water to typhoid fever occurred last year at Plymouth, a small city in Luzerne County, Pa.; and for the invaluable lessons taught by this epidemic we owe much to the committee sent by the Mayor of Philadelphia to investigate the subject, and it is a plain and perfect explanation of the case. The explanation is as follows:

"The mountain-stream is a small one, running down over a rocky bed, and on a declivity not eighty feet from its bed a dwelling is situated, wherein, during January, February, and March, was located a case of typhoid fever that is only now convalescent, the worst period of the case being about the 30th of March. The attending nurse was in the habit, during each night, of carrying the excreta from the patient and depositing it on the ground toward the stream. The ground during all this time was frozen and covered with snow, until the thaw and rain already alluded to occurred. The poisonous character of the dejecta is not destroyed by freezing, but is only kept in a state of hibernation.

[1] Closten, Germany, 1878, Berlin. klin. Wochenschrift.

"A great part of the three months' accumulation of decta was suddenly swept into the rapidly running stream, and reached the lower reservoir as quickly as a man walking fast could have arrived there.

"In fifteen days from this time the epidemic began, fifty cases occurring daily between the 10th and 20th of April. Up to the present, twelve hundred have been sick and one hundred have died out of a population of eight thousand. For the first three weeks the few people in the town who used well-water exclusively escaped the disease. The period of incubation varies between ten and twenty days, or longer, and therefore no other conclusion can be arrived at than that the infective poison existed in the mountain-water and originated from the one case of fever in the house on the side of the stream."

This entire and comprehensive report is on file in the Mayor's Office, Philadelphia, and is also published in the "Proceedings of the County Medical Society," May 13, 1885. The committee consisted of M. S. French, A.M., M.D., Surgeon of the Police Department of Philadelphia, and E. O. Shakespeare, A.M., M.D., Pathologist of the Philadelphia Hospital.

Last October a severe epidemic of typhoid was in progress in Imlaystown, N. J., about forty miles from Camden; and I went out there to investigate it, and was greatly assisted in so doing by the kindness of Dr. H. G. Norton.

I found that a brook about four feet wide runs through the village. A street runs parallel with the stream, about one hundred feet from it. A row of houses is situated between the brook and the street, and the back yards extend to the brook, about forty feet distant. Between the brook and the houses is situated a row of privies, and a row of wells for drinking-water. The privies are situated on the bank of the brook, so that the fecal matter from them has to run only a distance of three or four feet to get into the stream. The wells are between the stream and the dwelling-houses, and about thirty or forty feet from the brook. The somewhat impervious strata has a slight dip toward the well and underlies the locality. On measuring, it was found that the floor or bottom of the wells was not more than a few inches below the floor of the brook, and when the water was high in the brook it was also high in the wells, and that there was porous ground between the brook and the wells of the privies.

Beginning up the stream, and designating the houses, which are but a few feet apart—not over fifty feet—and numbering from 1 to 3, I will give you the following explanation:

In 1883 a family came to No. 1 suffering with "typhoid-malarial fever and diarrhœa." The children had fever and bowel-trouble, with diarrhœa, lasting for months, until the spring of 1885. On August 14, 1885, a young lady was taken with typhoid fever in this same house. On August 28th another young lady was taken with the disease in No. 2, the next house below—down the stream. August 27th, patient at No. 3 took the disease. September 12th another patient took the disease in No. 3. In September a relative of the family in No. 2 visited the town, drank the water, and died in a few weeks afterward of typhoid fever. September 30th a patient opposite to No. 2 took the disease. In the spring of 1886 the family had moved out of No. 2; the well had been kept closed, and had not been cleaned out. A new family moved into No. 2 in April or May, 1886. The boys drank the well-water, in spite of protests, and took the disease in June, 1886. One of the brothers died. The girls, who would not drink the water, escaped the disease.

An analysis of this water from the wells, by Professor H. B. Cornwall, of Princeton College, showed the water to be thoroughly contaminated with fecal matter. Evidently the virus had remained in one of these wells; a year had passed, and yet the winter had not been able to kill it.

The length of time that the virus will remain active has not been ascertained, but it is known to be years, in water that is not much disturbed.

I have cited these examples because they are so recent and so near at hand. Hundreds of instances might be cited, and the evidence piled up almost *ad libitum;* but, if further examples would not be superfluous in this paper, the time—twenty minutes—allotted to me would preclude my citing them here, and I might say now that much of the data upon which my remarks have been based is not included in this paper for the same reasons.

In the face of what is already known, I do not think that any student of sanitary science can deny that the poison of typhoid may be carried by the water-supply. I do not know that any do; *but the extent to which it is carried by water and the preventability of the same are the great points* that do not seem to be sufficiently appreciated by us, and scarcely appreciated at all by the people in general.

If the people can be made to understand that almost all the cases of typhoid fever come from the water-supply, and that there is no disease more easily prevented than this, we shall have accomplished the first great step toward the annihilation of one of the worst destroyers of mankind.

Look at the dreadful suffering caused in Philadelphia and Camden to-day by ignorance or indifference to these facts. Only a few days ago a noble wife and young mother died in our city of this dread disease, thus blighting the prospects of a happy family; and as I stood by her bedside I could but regret that another life had been needlessly sacrificed.

The city of Camden had deliberately connected the water-closets and sewers containing the poison with the water-supply, and then distributed it, thus laden with the deadly virus, to the inhabitants of this city, but a few hours after it had left the sewer. The husband of this lady is "as a lamb dumb before its shearers, it opens not its mouth;" so he paid his water-tax to the city, his wife drank the dearly bought "leprous distilment," and gives up her life as the result.

Is there no redress; is there no hope of escape for the people in these great cities? Must they continue to die by hundreds, as the death-returns show every year, at a greater cost and expense, indeed, than pure water could be procured for? Philadelphia also pours the poison into the cup, and then puts it to the lips of her most choice citizens, and kills off about seven hundred of them a year, according to the official report.

The disease cannot occur without the virus to produce it, and the virus can be kept out of the drinking-water, and it should be kept out at any cost. It would pay at *any* price. Every death that is preventable is needless, and is a reproach to the community. Dr. E. O. Shakespeare, an eminent investigator of contagious diseases, who has been sent abroad by the highest executive authority of the United States, to investigate the nature and causes of cholera, says, in the *New York Medical Journal*, January, 1885, that "epidemics of typhoid fever are absolutely preventable and controllable, and neglect to employ proper means to this end should be regarded as inexcusable."

Great reforms and revolutions have taken place within our own recollection; and the student of science dares to indulge the hope that, even during his short life, he may have the pleasure of seeing the death-rate from typhoid fever reduced more than ninety per cent.

ANTIPYRINE IN TETANUS.—Dr. A. A. Elliott, of Steubenville, O., suggests the employment of antipyrine in tetanus. His experience with it, he says, has been limited, but from its action in other conditions he believes that it should rank at the head of the list of relaxing remedies employed in tetanus.

LOCAL TREATMENT IN DIPHTHERIA.

REMARKS SUGGESTED BY THE DISCUSSION IN THE SECTION ON PRACTICE OF THE ACADEMY OF MEDICINE, MARCH 15TH.

BY C. E. BILLINGTON, M.D.,

NEW YORK.

THE conclusion of the important and valuable discussion which followed the reading of my paper on "Local Treatment in Diphtheria," before the Section on Practice of the Academy, on March 15th, was reached at so late an hour that I abstained from inflicting further remarks on an audience which had been both patient and kind. On reading over the report of that discussion, however, it seems to me to present an occasion for bringing out distinctly certain differences in the practical details of treatment which are worthy of the careful consideration of the profession, and this may now be done with more brevity and clearness than it could have been by me in extemporaneous speech.

First, as to the remarks of Dr. Jacobi. The fact that we agree so fully in general principles makes our differences in the mode of their application the more liable to be overlooked, although we have both been explicit in the statement of our methods.

As to the internal administration of the tincture of iron, we agree that this drug is "among the most reliable antiseptic and astringent agents." Dr. Jacobi says: "A child a year old must take at least four grammes daily; a child of three or four years, from eight to fifteen grammes. The chloride is to be mixed with water and glycerine in various proportions, so that a dose is taken every hour, every half-hour, every ten minutes. *Thus other local applications to the throat become mostly superfluous.*" (The italics are mine.) "Potassium or sodium chlorate, from one to four grammes daily, may be added with advantage."

A comparison of these remarks and the formulæ given by Dr. Jacobi, in his published works, with mine on this point will show that there are differences of detail to which my experience has, rightly or wrongly, taught me to attach no little importance. But the most notable difference is in the sentence which I have italicized. I have from the first of my publications insisted on the importance of also frequently spraying the throat with the mixture of carbolic acid and lime-water in all cases of any gravity in which it can possibly be done, and have considered this so valuable as to materially modify the prognosis, it being, unfortunately, impracticable in very young children, in whose cases I have recommended the occasional syringing of the throat, when indicated, for cleansing purposes.

Dr. Jacobi says: "The usefulness of lime-water . . . has been greatly over-estimated." Believing, as I do, that lime-water is one of the most valuable medicinal agents in our possession for combating diphtheria, I cannot, of course, regard this difference as otherwise than important.

Again, while there is complete concurrence between us as to the importance of nasal syringing, there is an equally marked difference between our methods in this procedure. Dr. Jacobi says, "The tendency to sepsis forbids a long intermission of them." "I again insist on their frequent repetition." (In his book, page 218, Dr. Jacobi says, "They must be made at least every hour.") "The whole procedure need not take more than half a minute for the two nostrils; the children may be raised in bed, a towel under their chins. One person holds the hands, the other sits behind and injects gently, in order not to injure the ears."

The salient points of the procedure as recommended by me may be recapitulated as follows: The patient, if too young to submit voluntarily to the operation, should be firmly held by a method described. The syringing should, if possible, always be performed by the physician himself. It should be continued on each occasion until, if it be possible, the passages are thoroughly cleansed. This should not usually be repeated oftener than two or three times in the twenty-four hours, for reasons stated. The first syringeful or two will often not go through at all. Then will come masses and strings of thick muco-pus, then, not infrequently, larger or smaller pieces of membrane. The syringing should be persevered with until the injected fluid comes through (by the throat and other nostril) clear and clean. The patient should have time to get his breath between the successive syringefuls. I commonly use half a pint, sometimes more, of the tepid salt-water, and the time required for a thorough cleansing is always several minutes.

By this method the physician, who should certainly in every grave case of diphtheria visit his patient, if possible, two or three times a day, and who is or should be an expert in such procedures and better able than anyone else to judge just how much or how little is requisite, performs it once for all—the patients during the intervals having a complete respite from the one measure in the whole treatment which is really unpleasant and fatiguing, and the nurse having quite enough left to her in the half-hourly giving of medicine and spraying, and the frequent giving of nourishment. By the other method a less thorough and complete cleansing (in "half a minute") is to be accomplished "every hour at least," and that, too, often by nurses who lack dexterity and judgment, and in many cases being possible only by force and with a renewed struggle. What more striking illustration of the danger of intrusting such delicate operations to average parents and nurses could possibly be imagined than the instances so graphically related by Dr. Jacobi of the performances of some "trained nurses?"

It must be admitted that, theoretically, the frequency required in the method described by Dr. Jacobi is apparently in more logical agreement with the principles of local treatment, which require frequent medication and spraying of the throat, but it should be remembered that this medication and spraying do not, or should not, cause local irritation or undue fatigue, either of which would be a contra-indication to them. Moreover, it may be added that two or three times a day is the limit of frequency beyond which the washing-out of an empyemic cavity or a septic uterus is not usually found useful, and while the analogy between the two is not perfect it may yet be sufficient to be suggestive. But the real question is, which of the two methods is the more efficient in accomplishing the object for which it is employed?—and this can, of course, be answered only by experience. My own experience I have stated, but my present object is far from dogmatic assertion, and still further from controversy, but is to place both methods clearly and fairly before the profession, so that each may be tested on its merits and neither suffer discredit from any faults or failures of the other. Dr. Jacobi, who agrees with me as to the importance of details in the treatment of diphtheria, will, I am certain, concur with me in this wish.

The device mentioned by Dr. Jacobi, of protecting the tip of the syringe with a rubber mounting, is an excellent one, and so is that of drawing a short bit of small soft-rubber tubing over the tip of a syringe, which was first mentioned by Dr. J. H. Douglas in the discussion of my paper in 1880, and again referred to by Dr. Delavan in this discussion; but any tip whatever may cause irritation and epistaxis in awkward hands, and even in expert ones, if the sudden movements of a young patient's head are not properly restrained.

The importance of the method which I have described, of holding a young child's head for nasal syringing, may be better enforced by a single illustrative case than by a great deal of argument. I was recently called in daily consultation in a case of nasal diphtheria by a physician whose compact and muscular frame leaves no room to doubt that he is one of the strongest men in the profession in this city. The patient was a babe four months old. On the

second day it was decided to syringe the nose, the syringing to be done by me. The babe was accordingly seated across its nurse's lap, its hands secured by her, and the basin in place. To show the doctor my way of holding a child's head, I stood behind it, and, leaning forward, placed my breast against it, holding it with a hand on each side, saying, "You see in that way the head is held as firmly as in a vise." The doctor then took his place behind the patient, and, standing erect, held the head between his hands, and with the smile of conscious strength said, "That head is in a vise." I accordingly placed the syringe in position for injection, not actually touching the mucous membrane, but at the first entrance of the fluid into the nostril the babe made a sudden downward movement of its head, in spite of the doctor's hands, sufficient to cause, from contact with the smooth tip of the syringe, a very slight hemorrhage. After that this exceptionally strong doctor, in holding that four-months-old baby, did not scorn to bend forward and place himself in the position which experience long ago taught me is necessary for really holding a child's head motionless.

Dr. Winters very truly stated that tact is of great importance in such procedures as nasal syringing; but the kind of tact which is most valuable is that which thoroughly accomplishes necessary objects with the least wear and tear to the patient.

The treatment of nasal diphtheria by means of any medicament applied by a medicine-dropper, as recommended by Dr. J. Lewis Smith, I cannot but regard as an error in the direction of dangerous inefficiency. The object of local treatment in diphtheria was well summed up by Dr. Loomis in the words, "cleanliness and disinfection," and these in this relation, as elsewhere, are usually attainable only by thorough, well-directed measures.

That spraying is a valuable method of cleansing and medicating the nasal passages in the treatment of catarrh is well known, and that it may sometimes be so in that of diphtheria in such expert hands as those of Drs. Bosworth and Delavan cannot be doubted; but the question remains, Can any method of cleansing them be in general at once as thorough and as unirritating and as well adapted to cause dilution and removal of poison and transudative interchange through diphtheritic membrane *in situ* as the flowing through them of a stream of antiseptic fluid from a syringe or douche? That these objects cannot commonly be effected with the ordinary throat-atomizer I am positive, as I have seen too many melancholy instances of fatal toxæmia from nasal diphtheria, the result of valuable time having been lost in relying on this inefficient substitute for syringing. It may be added that by no atomizer whatever can spray be made to enter one nostril and come out of the other as spray.

Finally, on the very interesting case related by Dr. William H. Thomson, which is typical of an important class, I will make the following remarks: Can Dr. Thomson assert that at the time of the first chill there was not the commencement of a local diphtheritic process in the posterior nares—or, possibly, in the trachea? It will, of course, be replied that there was no evidence of that condition. It is astonishing how little evidence is sometimes manifested of the presence of considerable amounts of diphtheritic membrane in concealed situations. I have seen quite a number of cases in which there was no evidence of it anywhere, except constitutional symptoms, in which I have, by syringing, washed pieces of membrane from the posterior nares several times in the presence of other physicians. In another case of an adult patient who had previously been frequently subject to grave catarrhal and bronchial attacks, another attack of a week's duration, similar in all its physical signs to the previous ones, under most competent and vigilant medical attendance, terminated fatally—no nasal obstruction, no croupy symptoms of respiration or voice, no visible membrane anywhere. There had been exposure to diphtheritic contagion two weeks before the attack. There were symptoms of toxæmia. The autopsy showed the trachea and bronchial tubes completely lined with diphtheritic membrane; none in the larynx; the posterior nares not examined.

I have no disposition to be "wise above what is written," and am far from asserting that there is never a case of "primarily constitutional" diphtheria; but, according to my experience, the more thoroughly such apparent cases of diphtheria without a *diphthera* are investigated, the fewer do they become.

THREE CASES OF ACETONÆMIA.

By WILLIAM S. CHEESMAN, M.D.,

AUBURN, N. Y.

COMA is one of the commonest modes of death in diabetes yet perhaps of no subject is our knowledge more imperfect. Not, however, from lack of investigators and theories. To unravel the mystery of this sudden and tragic *dénouement* many acute minds have been engaged, and many hypotheses framed. Changes in the nerve-centres, thickening of the blood from accumulation of sugar, uræmia, hyaline degeneration of the kidneys due to accumulation of glycogen in their epithelia, fatty embolism of the pulmonary vessels and consequent carbonic-acid poisoning, overloading of the blood with acids generated by too exclusive meat diet, thus impairing its ability to take up the carbonic dioxide produced in the tissues, and leading to self-suffocation, have been proposed and rejected. The theory which, though opinions are as yet by no means consentient, receives most credence, refers the symptoms to an auto-intoxication. As long ago as 1857 Bettyns called attention to the fruity odor of the urine and breath of comatose diabetics, an odor closely resembling that of pyro-acetic ether, or acetone. Kussmaul detected in such urine an ingredient yielding acetone under treatment with reagents. It was believed by him that acetone existed as such in the blood, exhaling in the breath and being excreted in the urine, and the condition was termed acetonæmia. But it is now supposed that some acetone-producing substance, probably aceto-acetic acid, is developed by fermentative changes of the saccharine matter in the blood in quantities sufficient to overwhelm consciousness and finally life itself.

Many researches have been made to test this theory, with results far from harmonious. Van Jacksch has shown that diacetic acid is present in the urine of patients suffering from the continued fevers, cancer of the stomach, pernicious anæmia, hydrophobia, and in small amounts even in health. Frerichs has given it to animals, by intravenous injection of doses as high as twenty grains, without effect. Hence many doubt the causal connection between saccharine decomposition and acetonæmia on the one hand, and between acetonæmia and diabetic coma on the other. Nevertheless a majority of recent writers favor the acetonæmic theory as covering most facts. And certainly it is difficult to refrain from connecting this sudden assemblage of nervous symptoms with the coincident appearance in the urine of a substance very unusual, to say the least, and in the experience of many observers peculiar to such cases.

I have encountered three cases of acetonæmia, so called. The first was that of a lady, a little past middle age, whom I saw on November 4, 1883, with Dr. Amanda Hickey, of Auburn. A year or more previously Dr. Hickey had discovered the existence of glycosuria. Under strict diet the daily amount of urine had diminished, but the patient had passed from under observation until the doctor was called to visit her on the date above given. We found her profoundly comatose; temperature normal; pulse, 130, and very weak; respiration, 30, and here and there over the chest the râles of pulmonary œdema. The family stated that two days pre-

viously the patient had visited Syracuse, and after her return had seemed better than for some time, but that on the morning of the day of our visit she had, without headache, nausea, or other prodroma, become rapidly drowsy, stupid, and comatose. Inquiry as to her previous health elicited the very curious circumstance that she had been under the medical direction of the family clergyman, who, trusting to homœopathic manuals and a urinometer, had concluded that a specific gravity of 1.022 ruled out sugar, and had given a rosy prognosis in connection with phosphoric acid. Nevertheless a specimen obtained by the catheter contained, not only sugar in very considerable amount, but albumen also, while with chloride of iron the rich Burgundy red supposed to indicate the presence of aceto-acetic acid was obtained, and later in the day casts were discovered by the microscope. The patient died that same evening.

The second case was that of a boy, aged ten, whom I first saw, November 20, 1883. He had had measles a month before, since which he had rapidly run down, with the symptoms of diabetes mellitus. The daily amount of urine was one gallon, and contained sugar in large quantity. The gums were ulcerated, teeth covered with sordes, and he was greatly emaciated and confined to the bed. A non-saccharine diet combined with tonics worked rapid improvement. The daily amount of urine fell to two quarts, strength and flesh returned, and in two weeks the lad was up and about. But he was a spoiled and self-willed creature, and extorted cookies and other sweets from his silly mother on the sly, so that sugar never entirely disappeared from the urine. In April, 1884, I was sent for again. He was in bed, quite rational, but with a temperature of 101°, and suffering somewhat from dyspnœa, though nothing abnormal could be found in the chest. He was then passing six quarts of urine a day, with a specific gravity of 1.012, and containing sugar, albumen, and casts. With chloride of iron the wine-colored acetone reaction was struck, and I ventured to predict the near approach of coma. On the 19th the prediction was verified, and on the 20th he died.

It is true that in both of these cases a nephritis had been set up by the long-continued passage of sugar; yet in neither case did the coma seem uræmic. No anasarca, headache, vomiting, amaurosis, or convulsions preceded. It came abruptly, unannounced, and when the patients were apparently in good health. Moreover, the chloride of iron revealed the presence of a urinary ingredient not found in ordinary uræmia.

In the middle of February last a gentleman aged fifty-seven applied for relief from a gangrenous ulcer of the left leg. This was poulticed till the slough separated, when iodoform was used. The ulcer healed very slowly, and I was puzzled to account for its continued unhealthy appearance. On March 4th the patient called, complaining of shortness of breath and a feeling of oppression in the præcordium. Examination of the chest revealed nothing to explain this, and as he never had had asthma, I felt inclined to listen to his own interpretation of the matter, viz., indigestion. But on the 7th I was sent for to visit him. The same oppression of breathing continued. He had been awakened several times in the night with præcordial distress. As he walked up and down the room he breathed much more deeply, though no more frequently, than natural, and would strike his sternum and exclaim, "I'm all right every way but here; the trouble is right here." I examined heart and lungs again, finding nothing wrong. His wife, on being questioned, stated that he had lost weight recently. Then a suspicion flashed upon me, and I asked for a specimen of urine. Its specific gravity was 1.030; it contained neither albumen nor casts, but sugar; and with the chloride of iron the Burgundy red of acetonuria was produced.

Though knowing that in some reported cases coma had been precipitated by sudden withdrawal of starchy foods, I thought that, as acetonæmia had already developed, nothing worse could well happen, and so put the patient on broths and milk, and sent him to bed, a cathartic and diaphoretics being at once administered.

During the twelve ensuing days his condition grew gradually worse. The oppression in the chest continued. The respiration, though usually not above 22, was at times deep and labored, and he suffered occasional paroxysms of dyspnœa, closely resembling those of spasmodic asthma. These occurred oftenest at night, awaking and compelling him to lean forward, grasp the chair-arms, and labor for air. At such times the ear could rarely detect a few râles in his chest, never the wheezing and whistling of true asthma, and commonly nothing whatsoever. The temperature remained normal throughout. The pulse ran at about 120, and from the first was noticeably feeble, though regular. On auscultating the heart no abnormal sounds were heard, and no history of preceding heart-lesion, or of any disease likely to cause it, was obtainable. By the end of the first week œdema of the feet and ankles began. Never were there any head symptoms. The patient was drowsy at times, but only from losing sleep. Nothing approaching somnolency or stupor was observed. The stomach did its work well, vomiting occurring but on one day, when it was due to quebracho. The patient had one bloody stool; at other times the movements were regular and natural. Treatment was directed to meet the symptoms. The dyspnœa was best relieved by morphine, in combination with spts. æth. comp. Inhalations of oxygen, amyl. nit., fumes of nitre, smoking stramonium, quebracho, etc., were finally abandoned for this. Stimulants were freely employed. Meanwhile the urine continued, in spite of change of diet, to contain sugar in large amount. Its daily quantity averaged two quarts, the specific gravity ranging from 1.020 to 1.032. No albumen or casts were ever found. During the first three days its odor resembled that of amyl nitrite. The acetone reactions with ferric chloride, sulphuric acid, potassic cyanide, and caustic potash, gradually grew fainter, however, and the fruity odor of breath and urine coincidently disappeared. On March 18th I observed some subsultus. He was seen that day by Dr. Theodore Dimon, who confirmed the diagnosis. The next morning (the 19th), after an unusually comfortable night, and after having expressed himself as feeling better than at any time, the patient suddenly fell back in his chair dead. A specimen of urine, voided shortly before, contained sugar and acetone well marked again. No post-mortem was made.

This case affords further confirmation of the prognostic value of the acetone tests. Though instances are recorded of recovery out of even coma itself, yet these are too rare to alleviate the extreme gravity of the outlook when once the urine turns red with ferric chloride.

THE PREVENTION OF MAMMARY ABSCESS BY ANTISEPSIS.—Regarding this subject, alluded to in an article by Dr. E. Brush (THE MEDICAL RECORD, March 26, 1887), Dr. A. Rose, of this city, says: "It might be more instructive to speak of the principle of treatment than to mention only one certain remedy, while many others of the same class have absolutely the same effect. It is a well-established fact that mammary abscesses are caused by infection entering through cracks or sores of the nipples. Any measure which protects the nipples, that they may not crack or become sore, and, above all, which secure their *aseptic* condition previous to and during lactation, will surely and always prevent mammary abscess. Dr. Brush's treatment is simply antiseptic."

TREATMENT OF PAINFUL HÆMORRHOIDS.—Dr. Thomas H. Kinnard (*Pacific Med. and Surg. Journ.*) has treated twenty cases of painful hæmorrhoids successfully by anointing them with extract of garlic, one part; olive-oil, two parts. If they are internal, he injects a drachm of the mixture into the rectum.

Clinical Department.

FRACTURE OF THE INTERNAL EPICONDYLE TREATED WITHOUT SPLINTS.

Dr. G. T. Loomis, of Minneapolis, Minn., reports the following case: "H. D——, aged nine, was thrown forcibly upon the ice, striking his elbow, and was brought immediately to my office. He was suffering severe pain about the internal condyle, which was increased by any attempt at extension, although the latter could easily be done. The arm was semiflexed, the point of the condyle being displaced downward one-half inch, and could be moved easily in any direction. I flexed the arm and reduced the displacement easily, and applied a bandage firmly, the arm being held in a sling. No pain and little swelling next day. The dressing was left in position one week, and the arm could then be extended about one-half. The bone remained in position. Passive motion was made nearly every day for four weeks, the arm swinging at the side without bandage. At the present time, two months after the accident, the boy can extend and flex the arm nearly as well as ever."

MARGINAL PLACENTA PRÆVIA RELIEVED SPONTANEOUSLY.

Dr. Daniel Brown, of this city, writes that he was called about two o'clock one morning to attend a woman in confinement. The woman lived in Thirty-sixth Street, and much time had been lost, as the messenger had gone first to Broome Street to call the family physician, Dr. Agan. The latter was occupied with another case, and referred the husband to Dr. Brown. When he reached the bedside he found the patient sitting on the edge of the bed—she had refused to lie down during the previous time—her night-dress, the floor, and part of the bed were pretty well saturated with blood. As soon as possible the unpleasant task of finding out the depth of his difficulties and responsibilities was entered upon, and to his great relief he found that though the pains were very sluggish at this time the head was firmly engaged at the superior strait, and only a slight oozing of blood continued. In fact, all danger was over, and all he had to do was to attend a tedious delivery, which was accomplished before daylight. Dr. Agan since reports both mother and child doing well. After the placenta was delivered it plainly showed the extent of the part presenting—the bruised and clotted appearance in the form of a crescent-shaped border, about three-fourths of an inch in its widest diameter. Dr. Brown asks whether a spontaneous cure of this troublesome and dangerous complication is often met with.

THE TREATMENT OF NEPHRO-LITHIASIS.

Dr. J. B. Potsdamer, of Philadelphia, submits the following: "The objects to be attained in the treatment of this disease are: 1, To remove the already formed concretions; and 2, to prevent their further formation. The latter object is, to a great extent, accomplished by a proper regulation of the diet. The researches of Lehmann, Heinrich, and others, prove that there is an increased excretion of uric acid when the amount of animal food consumed is augmented; that is to say, an almost exclusive flesh diet promotes the formation of renal sand. As other articles of food cause an increased excretion of uric acid, general moderation in eating must be observed, the patient confining himself to white meats and substances easy of digestion. Vigorous individuals accustomed to high living should take active exercise, and liquors and highly seasoned foods must be forbidden. The best solvents for sand and gravel which are composed of uric acid, urates of ammonia, and oxalate of lime, are the alkalies and alkaline salts. The sulphates are of inestimable value in this connection, especially the waters containing Glauber's salt. The phosphates have also been strongly recommended. Waters containing the carbonates and free carbonic acid are of value, especially when in combination with the other salts. The free use of plain water will aid the removal of calculi; but unless intelligently administered, the use of the alkalies will prove injurious. They must not be given in such quantities as to give the urine an alkaline reaction. If this should occur, the urates and uric acid will be held in solution, but there will be a precipitation of the earthy phosphates. The following salts are the most beneficial, in the order named: Sulphate of sodium, carbonate of sodium, and the phosphates; particularly the soda salt. Any natural mineral water that will combine all or almost all of the above should, at least theoretically, be the best remedy for this disease.

The Carlsbad waters are rich in those very salts which have been found to be the best remedial agents in nephro-lithiasis, and experience has taught that the administration of the alkaline waters is superior to taking water and the alkalies separately, and that the best results have been obtained from the Carlsbad waters.

In Ebstein's article on the treatment of nephro-lithiasis, in Ziemssen's "Cyclopædia of the Practice of Medicine," vol. xv., the author speaks in the highest terms of these waters. They should be taken hot. The patient should begin by taking four gobletfuls a day. This may be increased up to the point when the urine shows a tendency to become alkaline, but not beyond this point; for, as was stated above, the production of alkaline urine must be avoided.

THE EARLY TREATMENT OF PRESSURE-PARALYSIS OF THE RADIAL NERVE.

Dr. William Browning, of Brooklyn, sends the following communication: "Among the causes of radial paralysis, temporary compression of the musculo-spiral nerve occurs with varying frequency. The idea of many observers, that wrist-drop is almost synonymous with lead-poisoning, is not borne out by the very different experience of others. In the three years from 1884 to 1886 sixteen cases of wrist-drop due to pressure—all in males and of the unilateral form—applied for treatment at the Long Island College Dispensary, as against only eight cases due to plumbism—two in females and all but two bilateral. In two of these sixteen cases the etiology was not quite certain, nor, of course, has it been possible to follow up all of them. Compression by growths, cicatrices, etc., and gross injury, such as crushing the nerve, constitute severer affections. The prognosis, as given by most writers, is not favorable to an early recovery, several months usually elapsing, though a small proportion of cases recover in a short time. As recently stated by Vulpian and Déjerine, degeneration, with its attendant electrical reactions, does not usually follow, except in the long supinator muscle. Such absence of other than functional change indicates that the lesion in this class of cases is of a slight nature, and ought to be easily remediable. In my experience this is also the case, provided treatment is instituted within the first few days. If much over a week has elapsed, the trouble is inclined to become more obstinate. There is one symptom bearing directly on treatment which does not seem to have been specially observed, and to which it is desired to call particular attention. If in such a case the course of the musculo-spiral nerve around the back of the arm be closely examined early in the trouble, a tender joint can generally, if not always, be discovered. This corresponds, approximately at least, to the seat of injury, and must represent a slight inflammation in or about the nerve. The later obstinacy of the paralysis, when left undisturbed, is doubtless owing to this very

limited process. No autopsy in such a trouble has been reported, and hence the exact nature of the lesion is unknown. Déjerine and Vulpian were unsuccessful in their attempts at producing a like paralysis in dogs. The first step in the early treatment, then, ought to be directed to this tender point. Strong counter-irritation, or local derivation in the shape of a fly-blister immediately over the tender spot, has, in my experience, proved adequate. Next, the forearm may be douched, alternately hot and cold, and well shampooed. Finally, a strong faradic current is applied. Some numbness is usually complained of along the radial side of the dorsum of the hand and forearm. This region is first touched with the faradic brush. Then with ordinary electrodes a current is used of sufficient strength to cause ample contractions in the muscles. Voluntary control over the paralyzed parts is seen to gradually and completely return, a couple of applications of the current at an interval of as many days being all that is required if a cure is to be effected in this way. Where it has been possible to carry out this plan there has been no failure. Otherwise success is uncertain, as *e.g.*, in one patient where sixteen days had elapsed. No tender spot along the nerve could be made out, and the remaining treatment proved of little immediate avail. Perhaps if treatment in the later stages of the trouble were directed to the point of injury, more success would be achieved. The nerve below reacts electrically, though above it neither responds to the will nor to the current; hence the point of injury can be determined even after the tenderness above described has passed away. The same general method would be applicable to like trouble in any other nerve."

Progress of Medical Science.

THE RELATIVE DIGESTIBILITY OF THE CHIEF ALBUMINOIDS. — Dr. James Fraser has made a series of experiments (*The Lancet*) to determine the digestibility of various proteids. The substances experimented upon were: Raw albumen, serum and egg; cooked albumen, also serum and egg; globulins, raw and cooked; myosin; derived albumen, viz., syntonin, alkali-albumen, casein; vegetable albumen, impure gluten. Each of these was subjected to six hours' peptic digestion, then for six hours to pancreatic digestion; at the end of this time they were placed in a temperature of 176° F., and dialysis was allowed to proceed for twenty-four hours. The author gives the result of his researches in a tabulated form, and estimates the amount of peptones dialyzed as nitrogen. The most digestible albuminoid was found to be cooked myosin; then came raw serum-albumen, after which the order was as follows: syntonin, alkali-albumen, raw-egg albumen, casein, cooked-egg albumen, cooked serum-albumen, raw myosin, and gluten. It might have been expected that syntonin would have headed the list, as it is partly digested beforehand, yet it was not far from being ahead of the others. These results apply to the albuminoids after they had gone through the processes of peptic and pancreatic digestion, as well as dialysis. Each albuminoid substance was reduced to a dry solid state, and, on taking the percentage relation between the amounts dialyzed and the amount of albuminoid actually used, it was found that in no case did fifty per cent. of the dry solids pass through the dialyzer, this depending rather on the short period of dialysis than on imperfect peptonization. On examining the tables showing the amounts of nitrogen dialyzed in each stage of the experiment, it is seen that in no case did two per cent. pass through the dialyzer during peptic digestion; the uncooked albumens gave the highest peptic results, and syntonin next. Turning to tryptic digestion, cooked myosin heads the list, then the order is as follows: raw serum-albumen, raw-egg albumen, syntonin, cooked serum-albumen, raw myosin, casein, gluten, and cooked-egg albumen last; this experiment being conducted in an alkaline menstruum, those substances which are most easily soluble in an alkaline solution have naturally an advantage in digestion; hence the high position of raw albumens and of syntonin. During the two stages of peptic and pancreatic digestion, peptones were formed more rapidly than they could pass away through the parchment paper, and accumulated in the dialyzers, so that when the ferment was killed by heating to 176° F., and dialysis was continued for twenty-four hours, a larger proportion of crystalloid matter passed through than in the former stages; these peptones were both of peptic and tryptic formations, as in the case of those under the head of pancreatic digestion. The largest proportionate result was found in the case of cooked myosin, which was not far ahead of raw serum-albumen; then came cooked-egg albumen, alkali-albumen, casein, cooked serum-albumen, raw-egg albumen, raw myosin, and lastly gluten. Many of these albuminoid sare not ordinarily used as foods; for instance, serum-albumen, raw myosin, syntonin, alkali-albumen, though they are the most digestible of the albuminoids. By utilizing the results of these experiments much valuable aid can be given to those who require good nutritious diet for invalids unable to digest solid food. Beef-tea, as ordinarily prepared, is of little nutritive value; but if the white of an egg be mixed with a cup of beef tea and heated to about 160° F., the value of the beef-tea is greatly enhanced. Again, if minced raw beef be just covered with very weak hydrochloric acid (four drops of acid to one pint of water) and left to macerate for the night, the liquid strained off and squeezed out of the flesh by wringing in a cloth contains so much syntonin as to make it highly nutritious when neutralized; such a liquid will remain clear after boiling to remove the raw flavor. In cases where the digestive powers are not in abeyance, one may give by mouth or by enemata one or more of the various forms of peptonized foods or fluids that are now in the market. In cases where the digestive powers are lost in the stomach, but retained in the intestine, or where some obstruction to the passage of food into the stomach exists, the above experiments will give much help in treatment. The experiments with casein and gluten show that there are very few worse foods for a delicate stomach than the usual bread and milk; whey is a mildly nutritive fluid, and easily digested. In cases where it is desired to feed the patient through the intestine, those substances found soluble in alkaline fluids, and therefore easily acted on by the pancreatic juice—viz., raw albumen, syntonin, or alkali-albumen—may be used alone or dissolved in some meat-tea.

VALVULAR DISEASE OF THE HEART WITHOUT SERIOUS SYMPTOMS.—Sir Andrew Clark has published recently some remarks concerning cases of valvular disease of the heart, known to have existed for over five years without causing serious symptoms. He sums up his conclusions as follows (*The British Medical Journal*, February 19, 1887): 1. There are many persons with long-standing valvular disease of the heart, engaged in the active business of live, who without any symptom of heart-disorder have enjoyed good health, and have reached an advanced age. 2. The mitral regurgitant murmurs so often encountered in chorea, for the most part, disappear within eight or nine years of the attack. 3. Valvular inflammations, and their effects arising in the course of rheumatic fever, do sometimes disappear, and leave behind no clinical evidence of their former existence; this occurring for the most part in the young, also occurs sometimes in the middle-aged. 4. The signs of valvular defects arising out of the degenerative changes of middle life do also, on rare occasions, disappear, and when circulatory and respiratory disturbances accompany their commencement they sometimes subside and permit of apparently complete readjustment. 5. As there must be in the histories, habits, occupations, and surroundings of patients

with valvular disease conditions which in one case bring about secondary disorders, and in another case exempt it from them, it is desirable that the respective *differentiæ* should be discovered, and made capable of application to practice. 6. Any systematic and critical study of this subject likely to lead to practical issues could be undertaken by the Collective Investigation Committee, and not by it unless actively assisted by experienced general practitioners who possess, in a special manner, the knowledge necessary to the end in view. 7. A joint inquiry of the kind proposed, conducted with due patience, discrimination, and accuracy, would greatly extend our knowledge of the natural history of diseases of the heart, and largely increase our means of assisting those who suffer from them.

INTRA-PERITONEAL HEMORRHAGE IN A NEWLY-BORN INFANT.—In connection with the subject of hemorrhages of the newly born, so recently brought to our notice by Dr. E. C. Wendt (THE MEDICAL RECORD, February 19, 1887), the following case, reported at a late meeting of the London Medical Society (*The Lancet*), will be read with interest. The case was observed by Dr. Keser. The child was born at full term on April 29th, and the labor was normal. The infant was in a state of apparent asphyxia, but respiration was easily established. There was slight subconjunctival hemorrhage on the right side. On May 1st swelling of the scrotum was observed, and the penis was edematous. On May 4th the scrotum was much more swollen. The temperature in the rectum was 98°. The abdomen became swollen and the lips were pale. The cord separated on that day without hemorrhage. The child died on the ninth day. There was an ecchymosis in the middle of the back. Melæna or hæmatemesis was not observed. The spleen was enlarged; the upper half was swollen and congested and very dark from hemorrhage, which seemed to have come from a lesion that looked like an infarct. The peritoneal cavity was full of dark, fluid blood, the amount escaping being about eight ounces. The splenic artery appeared to be normal, as well as the other branches of the aorta. There was no hemorrhage or infarcts in any other organs. The mother had had eight pregnancies. The first child died at the age of eighteen days, but the cause of death was unknown. After this child five still-births occurred. The seventh child was born at full term, was nursed by the mother, and remained well until the end of the fourth week, when epistaxis set in, followed by hæmatemesis and melæna; large ecchymoses appeared on the trunk and limbs, and death ensued after a week's illness. The mother had no tendency to metrorrhagia or to any other form of hemorrhage. There was no hæmophilic history so far as could be obtained.

THE PALLIATIVE TREATMENT OF CARCINOMA OF THE UTERUS.—Dr. Gaches Sarrante reports a number of cases of uterine cancer, which could not be operated upon, treated with a fair measure of success in the following manner: The genital canal was first very thoroughly disinfected by means of copious injections of sublimate solution, and then all sloughs and loosened pieces of the cancerous tissue were removed, care being taken not to disturb those that were adherent, as it was desired to avoid all hemorrhage. Tampons, soaked in a four-per-cent. chloral solution, and then spread over with powdered iodoform, were now applied to the cancerous ulcer or inserted into the cavity, if any existed, formed by the loss of substance. This was applied so that the entire diseased surface was brought in contact with the medicated tampon, and was retained *in situ* by a vaginal tampon, being left undisturbed until the next visit. The results of this method of treatment are summarized as follows: 1, Hemorrhages, even when profuse, are absolutely stilled and prevented from recurring; 2, the ichorous surface of the tumor is cleansed, and presents the clear, red appearance of healthy granulation-tissue; 3, the pain is entirely relieved; 4, the general health of the patients is greatly improved and the discharge loses its fetid odor, so that the women are able to go out and en joy social companionship without the consciousness of being an offence to their friends. The iodoformized tampons were applied three times a week.—*Memorabilien*, November 4, 1886.

THE ACTION OF TEA AND COFFEE.—Dr. J. W. Putnam is opposed to the indiscriminate use of tea and coffee, especially in the young. He says (*The Medical Press of Western New York*, January, 1887) that they retard digestion; they retard destructive metamorphosis; they are cerebral stimulants; they are tonics; they are not food; coffee is a diuretic and antispasmodic. Bearing this in mind he thinks that it is easy for each to draw his own conclusions. Their prohibition or their use can be advised as special cases may demand. He is of opinion that "against the practice of giving tea and coffee to children we cannot speak too strongly. Childhood is the period when the nervous activity is at its greatest. The brain is ever busy in receiving new impressions. Reflex action, co-ordination of muscles, and the special senses are all under a constant course of training. The nervous system is pushed to its utmost capacity, and long is the list of victims that follow its over-stimulation. In these little people nothing but harm can come from the use of such cerebral stimulants as tea and coffee. Bad, then, as this practice is, let us as physicians be aggressive in its prohibition. Do not be satisfied by answering No, when asked as to its use, but let us educate the families with whom we come in contact that such practice is evil."

THE IMMEDIATE CAUSE OF DEATH IN MALIGNANT CASES OF FEVER.—At a recent meeting of the Sheffield Medico-Chirurgical Society (*The British Medical Journal*) Dr. C. H. Willey read a paper on this subject. The cases under consideration were those of scarlet fever and small-pox in which unconsciousness and death ensued at an extremely early stage. The pathology of this condition had not been explained. The conclusions to which Dr. Willey had arrived were based on clinical observations and post-mortem examinations in twenty-five of these malignant cases. The chief factors in the investigation appeared to him to be that the fatal symptoms were, in each case, those of a rapidly failing circulation, and that, after death, the heart-chambers, especially the right, were completely filled with white, jelly-like clot, which was, he said, clearly of ante-mortem formation. The failure of the circulation (particularly in small-pox cases) ensues with great suddenness, and the question arose, Was this failure or the thrombosis the primary condition? Evidence from the main symptoms, and from such invariably accompanying ones as pulmonary œdema and copious diarrhœa, Dr. Willey said, goes to show that a failure of the circulation is the primary cause of death, and, further, that not only is the heart paralyzed, but the entire arterial system—in fact, a total collapse of blood-pressure throughout the vascular system is brought about with more or less suddenness by a functional failure of the sympathetic nervous system, governing, as it does, the cardio-motor and vaso-motor functions. The pulmonary œdema and the profuse intestinal flux are due to the same cause; they are undoubtedly associated with a greatly diminished blood-tension in the arterial system.

MIDWIVES IN FINLAND.—The obligatory course of studies for midwives in Finland is of one year's duration. There is a supplementary course of two weeks, for those who have shown unusual aptitude, in obstetrical operations, such as embryotomy, the use of the forceps, etc. The students are almost all women of the lower classes, and the only requirements are that they shall be able to read and write. They are allowed to perform operations only when it is impossible to procure the services of a physician.

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INTRA-MUSCULAR INJECTIONS OF QUININE.

IN cases in which quinine is indicated, but in which it is not well borne by the stomach, attempts have often been made to introduce the remedy subcutaneously. This method sometimes gives excellent results, but it has its inconveniences and its dangers as well. It is painful in its immediate effects, and it is also apt to leave a tenderness of the subcutaneous tissues which precludes, for a longer or shorter period, any repetition of the injections in that neighborhood. It is said to have caused tetanus, and it not infrequently gives rise to the formation of troublesome abscesses, upon which, in one case at least, pyæmia has supervened. These dangers, in most cases, more than counterbalance the good to be derived from quinine administered in this way, especially when the rectum is still available as an avenue for the entrance of the drug into the system.

Dr. Carlo Bareggi was led by these considerations to make a thorough trial of deep intra-muscular injections, which have been made before, but never, we believe, on so extended a scale. His article, accompanied by a tabulated statement of the cases and of the results of treatment, is published in the *Gazzetta degli Ospitali*, No. 9, 1887. The number of patients subjected to experiment was only eighteen, but the total number of injections made amounted to the very considerable figure of six hundred and fifty-three, so that the conclusions drawn by the author as to the value and the innocuity of the method would seem to be justified by a tolerably extensive experience.

The injections were practised only in those cases in which they were demanded by reason of an intolerance for the drug on the part of the stomach and rectum. The salt used was the muriate of quinine, dissolved in distilled water in the proportion of one part to five, and from two to ten injections, of fifteen grains of the salt each, were made in a day. Every precaution was, of course, taken to insure absolute purity of the solution and cleanliness of the syringe. The needle was passed deeply into the gluteal region, the skin of the nates having been previously washed and cleansed with carbolated oil.

The injections were in all cases well borne, and in none did inflammation or abscess follow. The cases treated in this way were: Nine of malarial fever, eight of typhoid fever, and one of pyæmia following urethral abscess. The author insists upon the selection of the muscular region of the nates as the site for the injections, for in one case in which the lumbar region was chosen a very large and troublesome abscess was produced. In every case a complete cure was obtained. Dr. Bareggi claims, therefore, that this method is free from danger, and that it may safely be resorted to when, from any cause, it is impossible or impracticable to give quinine by the mouth or rectum.

THE EFFECTS OF IMMOBILIZATION UPON THE ARTICULATIONS.

IT is a curious fact in medicine that questions which would seem to be capable of actual demonstration, not only by experiment but also by the observation of daily occurring clinical facts, are still subjects of warm dispute, and are yet apparently as far from being conclusively settled as on the day when they were first broached. This is the case in regard to a question apparently so easy of solution as that of the behavior of joints after long immobilization. Many authorities teach that the retention of an articulation in a fixed position for any length of time will inevitably lead to true anchylosis, while others maintain with equal positiveness that no permanent impairment of the functions of the joint can be so caused.

In the hope of arriving at some satisfactory solution of this vexed problem, Dr. Albert Moll made a number of experiments on rabbits by immobilizing their hind legs in plaster-of-Paris splints (*Virchow's Archiv*). He made three sets of experiments. In the first, sound legs only were immobilized; in the second, the bone was broken before the application of the splint; and in the third, the animal was allowed to run around freely for a time after the removal of the retaining apparatus before the joint was examined. No passive movements, however, were made in this last series of experiments—the animals were merely permitted to run free, as they would or could.

In the first series of cases there was no anchylosis, nor even an approach to it; the joints which had been immobilized were entirely free from any traces of inflammatory action. In the second series some cases of articular inflammation were observed. This condition was more frequently present when the fractures were compound and situated in close proximity to the joints, although not involving them. Whether this inflammation would always result in anchylosis the author was unable to say. He had observed such a termination in but one case. In some of the cases of the third series there was complete restoration of the function of the joint, but in others a certain degree of stiffness remained, though probably this could have been overcome by passive motion. The limitation of motion was apparently due, in some cases at least, to certain more or less serious changes taking place within or about the joint, such as destruction of the articular cartilage, shortening of the ligaments, shrinking of the capsule, muscular atrophy, etc.

Dr. Moll concluded from these experiments that a sound limb could, with perfect safety, be immobilized for an indefinite period, and in cases of simple fracture, not seated near the joint, there was no danger of anchylosis.

In compound fractures, however, especially those in the neighborhood of an articulation, there was danger of joint inflammation and subsequent anchylosis, but even here the evil result should probably be referred to the fracture rather than to the immobilization of the articulation.

A CONTRIBUTION TO THE SURGERY OF THE LUNGS.

THE fact that the surgery of the lungs is still in its infancy, and that the justifiability of an operation for pulmonary tuberculosis is as yet *sub judice*, is a sufficient apology for the notice of the following case, reported by Dr. A. Casini in the *Rivista Clinica e Terapeutica* for January, 1887.

The patient was a man, forty years of age, an inmate of the Hospital for Incurables, at Naples. Examination revealed the presence of an apparently superficial cavity in the right mammary region, extending from the third to the fifth intercostal space. There were night-sweats, fever, cough, with purulent expectoration, diarrhœa, and all the other general symptoms of tuberculosis. Examination of the sputa showed the presence of tubercle bacilli. Dr. Casini resected the fifth rib, and would have resected the fourth, but was obliged to abandon the operation temporarily on account of evidences of heart-failure. The following day the cavity was opened and washed out with a disinfectant solution, and was subsequently treated with insufflations of iodoform, and irrigations with a 1 to 1,000 solution of corrosive sublimate. The expectoration at once began to diminish in quantity, and within ten days had lost its purulent character, while no more bacilli were to be found. The patient was discharged, and returned for examination some months later presenting no symptoms of pulmonary or general tuberculosis.

Emboldened by his success in this instance, the author formulates the following conclusions:

1. Surgical intervention will arrest the tubercular process when it is circumscribed in the lung. Opening, evacuating, and washing out a pulmonary cavity is the same, saving the greater or less difficulty of the operation itself, as opening a tubercular cavity in a bone, or excising a tubercular product in the skin.

2. A pulmonary cavity, when circumscribed, is to be regarded as a local tuberculosis, and any extension, metastasis, or generalization of the disease may be averted by an early and a thorough removal of the morbid process.

We should hesitate to regard these conclusions of Dr. Casini in the light of axioms for the guidance of pulmonary therapeutists, if we may be allowed, for brevity's sake to speak of the latter as a distinct class of practitioners. But the case reported is an interesting and instructive one, by reason of its successful issue, and it is a valuable contribution to the literature of pulmonary surgery.

INTESTINAL WORMS AND PERNICIOUS ANÆMIA.

DESPITE the not inconsiderable amount of study which has been devoted to the causes of this condition, there are still many cases of disease, in which anæmia is the most prominent or the sole symptom, which progress to a fatal issue without any sufficient reason being discoverable.

In a recent number of the *Finska Läkaresällskapets Handlingar*, Dr. J. W. Runeberg advances the opinion that the presence of intestinal worms may account for many of these cases. While in charge of the Helsingfors Hospital, from 1883 to 1886, he saw nineteen cases of pernicious anæmia, in twelve of which he found tapeworm (Bothriocephalus latus) and in one lumbricoid worms. Remedies were directed to the destruction of these parasites, and but one of the cases died, whereas in the years immediately preceding there had been nine fatal cases.

The author believes that the parasites were the cause of the anæmia, and that their destruction was the only means of averting a fatal issue. He regards the disturbance of intestinal function and the nervous irritation caused by the presence of the worms as the active causal agents, and believes that the anæmia of anchylostoma duodenale is produced in this way rather than by the loss of blood from the bites of the parasite.

It is not improbable that the unrecognized presence of intestinal worms may be a factor in the production of some cases of so-called pernicious anæmia, and it is a wise precaution to examine the stools in all such cases for the eggs of the parasites.

THE INFLUENCE OF THE BILE UPON THE CARDIAC MOVEMENTS.

A SLOW pulse is one of the well-known symptoms of catarrhal icterus or of other hepatic affections in which jaundice is present. It has been abundantly proven, notwithstanding the assertions to the contrary of Vierordt, that this symptom is due to the action of the bile upon the heart. But what particular constituents of the bile exert this action, and how the effect is produced, are questions which have hitherto not been satisfactorily answered. Feltz and Ritter have, indeed, shown by experiments that the slowing of the heart's action is due to the presence of the biliary acids, and that the cholesterine and coloring matters of the bile exert no such effect. They explain this, however, by assuming that the acids exert a direct paralyzing influence upon the cardiac muscle, while Röhrig attributes it to the destructive effect exerted by the bile upon the red blood-corpuscles.

Some interesting experiments, conducted by Dr. Francesco Spallitta, in the Physiological Laboratory of the University of Palermo (*Archivio per le Scienze Mediche*, vol. xi., No. 5, 1887), seem, however, to lead to a different conclusion. He experimented upon hearts removed from the body and also upon salt frogs, in order to eliminate the effect of the bile upon the red corpuscles. He used bile taken from different species of animals, and also experimented separately with glycocholic and taurocholic acids, but always obtained the same results.

We need not enter into the details of the experiments, which those interested will find fully described in the journal above referred to, but will give the conclusions at which the author arrived as a result of his investigations. He found that the slowing of the heart's action could not be due, entirely at least, to the loss of muscular power following upon the destruction of the red blood-

globules, since there was no blood present in the experiments made. It was therefore due to the paralyzing effect of the biliary acids acting directly upon the heart. But he showed that this was not the result of a direct action upon the cardiac muscular tissue, since other muscles, when impregnated with the bile acids, responded readily to electrical stimulation. Excluding, therefore, the destructive action upon the blood-globules and any immediate paralysis of the cardiac muscle as efficient factors in the production of this phenomenon, he came to the conclusion that the slowing of the heart's movements was due to an inhibitory effect upon the ganglia of the heart itself and upon the nervous filaments within the cardiac muscle. A similar action upon the central nervous system was, of course, excluded by the fact that the heart was removed from the body, and therefore its nervous connections were severed.

THE TREATMENT OF FUNCTIONAL GASTRO-ECTASIS.

DILATATION of the stomach is a disorder which French writers assure us is far more common and more often at the bottom of dyspeptic symptoms than has been generally supposed. The studies of G. Sée, Mathieu, Bouchard, as well as of German investigators, have brought the matter very prominently to the attention of the profession. The classification of dilated stomachs made by Mathieu in a recent contribution to the subject, is as follows:

1. Dilatation from organic lesion of the pylorus and constriction of that orifice.

2. Dilatation from degeneration of the muscular fibres of the walls of the stomach.

3. Dilatation from atony, or general feebleness of the muscular system.

4. Dilatation due to muscular atony from imperfect innervation, such as occurs in neurasthenia. Here there is at first an alternation of atony, with exacerbations of a hyperexcitability of the gastric muscle causing painful dyspepsia. Later there is permanent atonic dilatation.

It is only in the treatment of the last two classes of cases that much can be expected. Dr. Mathieu, in *Le Progrès Médical*, of February 12th, devotes an article to presenting the plan which he has adopted, and which is as follows:

First, as to diet. The stomach must never be overloaded, and consequently the number of meals should be increased and the amount taken at each lessened. All foods which leave a large residue of undigested matter should be forbidden, such, for example, as string-beans, salads, fruits; indeed, nearly all vegetables may have to be cut off except potatoes. The food ought to be very finely divided and thoroughly masticated. Wine should not be taken, as a rule. It is often better to have the liquids warm.

Second, the bowels must be kept carefully regulated. Almost all *les dilatés* are constipated. Professor Sée recommends for this condition a powder composed of sulphur, cream of tartar, and magnesia. A teaspoonful of this is taken at the beginning of each meal. Or enemata containing glycerine may be given each morning.

A third indication is to improve the general tone of the system. For this Mathieu thinks there is nothing better than a cold douche to the spinal column. In delicate patients the water may be at first warm.

The fourth indication is to strengthen in particular the muscular walls of the stomach. Calabar bean and nux vomica have been recommended for this purpose, but Dr. Mathieu thinks that there is nothing that begins in efficiency with powdered ipecac.

The prescription given is: ℞. Pulv. ipecac., 3 ss; aquæ, ʒ v.; syrup. aurant. cort., ʒ v. M. Sig.: 3 j. or 3 ij. every two or three mornings. This is not a very agreeable mixture, however, and a better way is to give the powder in the form of wafers, each containing from four to eight or ten grains. The patient takes one of these every second or third day. Most persons are not affected by the larger dose, but in the more sensitive it may cause nausea and vomiting.

Fifth, the symptomatic treatment of the pressure-feelings, pains, distention, etc., which are noted in the neurasthennic *dilatés* is best accomplished with cocaine or chloroform water.

It will be seen that Dr. Mathieu's treatment of gastric dilatation is one that will apply very well to quite a large number of cases of dyspepsia, whether there is dilatation or not. We are ourselves somewhat skeptical as to the frequency of functional gastro-ectasis, and certainly it is not always easy to make out milder forms of this condition during life.

ARTERIO-SCLEROSIS AND THE FIBROUS DIATHESIS.

DR. ISNARD, of Marseilles, in a monograph recently published at Paris, presents the results of a study of generalized sclerosis and its relation to arterial sclerosis. He has made some special observations in this line, and draws from them the conclusion that we must add to our list of "diatheses" the fibrous.

He accepts the facts so well established by many investigators regarding the existence of arterio-sclerosis. He finds in addition that this arterial sclerosis begins in the inner coat of the arteries, which are in contact with the vitiated blood. Sclerosis is found developing in the same way in the veins and lymphatics. The next proposition is that the arteries are the point of departure of all the scleroses. Some particular dyscrasia, like alcoholism or syphilis, may provoke the new connective-tissue growth in one particular organ, like the liver or kidney, but in all cases the new growth radiates from the sanguineous canals.

The fibrous diathesis expresses itself, therefore, first in a generalized arterial or vascular sclerosis, with later and consequent visceral scleroses, involving lungs, liver, kidneys, spinal cord, according to the dyscrasia or the local irritant.

A further deduction is that the blood is at the bottom of the trouble in all these sclerotic disorders, since they start from the coats immediately bathed by it.

There are several European pathologists of some prominence who have advocated the vascular origin of sclerosis, but the view that such is always the history of this change is by no means generally accepted; indeed, by many it is considered definitely refuted.

In making sclerosis in general a disease due to a vicious condition of the blood, Dr. Isnard, of Marseilles,

comes very close to the view, as we have been told it, of a well-known pseudo-scientist of this city. The latter gentleman treats the "fibrous diathesis" by ridding the blood of the "spores," etc., which generate the morbid organic changes.

AN UNJUST JUDGE.

If we are correctly informed, an act of the grossest injustice was perpetrated by one of our city's judicial luminaries very recently. A reputable physician of this city, a graduate of the College of Physicians and Surgeons, was charged with assaulting a woman in his office. The woman in question went to some unknown and apparently illiterate practitioner, who examined her, and in barely intelligible English certified that she had a perforated hymen and an inflammation of the vagina, and that the perforated hymen had existed before the alleged assault! Yet, with nothing but this certificate and the assertions of the girl, the doctor was thrown into prison, and, being unable to raise the very large bail, had to remain there for several days.

We have seen the alleged certificate upon which the doctor was sent to jail, and it appears to us, as it must to everyone who has intelligence and a sense of justice, that the proceeding was a most flagrant outrage. Certainly there should be some remedy against the imbecility of uneducated judges who lend themselves so readily to what has every evidence of being purely a blackmailing scheme.

News of the Week.

Professor Henry I. Bowditch, in an address on Homœopathy at the annual meeting of the Rhode Island Medical Society, concluded with the following recommendations: "1. Let every State society follow the lead of New York, and let the members be *allowed*, without injury to their status in these bodies, to consult with members of other 'legally constituted' medical societies. 2. Let members of either of these sects join our State societies, provided they prove to the State examiners or censors that they have studied medicine a proper length of time, and are able to pass the examination required of all applicants for admission; and provided, moreover, they agree to cease to call themselves by any peculiar name because they desire to enroll themselves as members of our time-honored profession. 3. Let us endeavor to make the American Medical Association rescind the vote whereby it expelled the New York State Medical Society, simply because, by its resolutions, it intimated that the fight between the regular profession and homœopathy had lasted long enough, and that hereafter consultations would be allowed to all 'legalized medical bodies.' 4. As interweaved and intimately connected with this controversy, let us, on all proper occasions, by all means in our power, endeavor to induce the American Medical Association to annul the illegal action of the Judicial Council requiring an annual signature by all the members to its so-called Code of Ethics, under the penalty of not being allowed to attend and take part in the friendly intercourse and scientific discussions of its meetings, a measure which tends to keep alive our divisions and encroaches upon our individual rights of conscience, instead of promoting that harmony in the profession of America which the Association, by its great power for good, might bring about at these annual meetings in various parts of the country."

Dr. H. M. Silver has been appointed one of the Visiting Surgeons to Gouverneur Hospital.

The Columbus Medical Colleges.—Starling Medical College recently graduated a class of twenty-one, and the Columbus Medical College a class of eighteen.

Failure of Medical Legislation in Ohio.—The Sinnett Bill to regulate the practice of Medicine passed the Senate, but was killed in the House. The *Columbus Medical Journal* says: "The newspapers of the entire State were generally opposed to the bill, but chiefly from ignorance of its provisions. Several, however, fought it from, apparently, pure cussedness. The *Ohio State Journal*, of this city, was most conspicuous for its opposition. It freely admitted to its columns anonymous communications from the lowest quacks, and when there was a dearth of these, copied similar matter extensively from other papers, while its editorial columns teemed with the most absurd and contradictory statements concerning the nature of the bill. At the same time it steadily refused to admit any communication whatever in defence or explanation of the bill, or even in correction of its own outrageous untruths.'

The Nashville Medical News is the title of a new journal, published semi-monthly at Nashville, Tenn., and edited by Drs. Richard Douglas and John W. McAlister.

Sick Immigrants.—In 1886, 300,887 immigrants landed at Castle Garden, being 30,748 more than the previous year. Among them were about eighty thousand women, fifty-five thousand men, and children. Of the total, there were sent back 997. Of this number, 70 were insane, 20 were idiotic, 1 was blind, 88 were enciente, 8 were convicts, and 18 were cripples. Three hundred and fifty-five suffered from diseases which prevented them from earning a livelihood, and 437 were without means of support. As a result of an investigation into the management of the emigrant hospitals the committee reports: "Your committee are glad to be able to say that no charge of unprofessional conduct or misconduct on the part of any of the physicians of Ward's Island has been sustained on investigation, and it is hoped that the medical staff will continue to maintain the excellent character and *esprit de corps* which this investigation has shown it now possesses."

The Louisiana State Medical Society meets at Alexandria on April 11th.

The Prescriptions of European Physicians.—There is another peculiarity about the prescriptions of most continental physicians that is perhaps worthy of note, and that is, that they scarcely ever combine two remedies in the same recipe, or even give the patient two active remedies at the same time. Arterial sedatives, such as aconite, veratrum viride, and the like, so commonly prescribed with us, I have never heard even mentioned, much less prescribed, during my present stay in Europe.—Dr. Caldwell, in *Chicago Medical Journal.*

JEFFERSON DAVIS AT A MEDICAL COLLEGE COMMENCEMENT.—At the last Annual Commencement of the Medical Department of Tulane University, New Orleans, Jefferson Davis was present, and was the recipient of some baskets of flowers. In responding to the present he said: "I thank you from my heart for the kind courtesy extended to me on this occasion. May your paths in life be as flowery as these baskets, and may you illustrate in your careers the high principles that belong to your profession. Standing next to the ministry, you have not only the care of the body, but you are the repositories of family confidences. To you are intrusted secrets that none others know. You stand by the bedside of the dying and hear their last utterances. I trust that science, benevolence, and morality will go hand in hand in your profession."

JEFFERSON MEDICAL COLLEGE graduated a class of 187 at its Annual Commencement on April 5th.

PHYSICIANS AND LADY PHYSICIANS ABROAD.—Dr. W. S. Caldwell, writing from Paris to the *Chicago Medical Journal*, says: "Most American physicians whom one meets here are young men just from the colleges, and they are too often only interested in such cases as a man would see only occasionally in a lifetime. They are eager to see Billroth resect the pylorus for cancer, and are constantly presenting their cards to Péan to get a chance to see operations that they never ought to attempt to perform. But I am even more disgusted with some of the lady physicians who come here to Paris. They will be pushed and jostled amid the great throng that follow the surgical service of Gillan at the Hotel Dieu; sit on a back seat with an opera-glass in hand to see Péan amputate a man's leg at the hip-joint; but go to the Children's Hospital, where Simon holds his clinic, and one finds not a single one of them there."

COFFEE contains from 1.18 to 1.28 per cent. of caffeine, the amount varying very little.—*Amer. Journ. of Pharm.*

PROFESSORS OF THE FIRST CLASS in the Paris faculty receive $3,000 a year as salary. This is probably not much more than half what professors of the first class receive in our large colleges.

THE MEDICAL SOCIETY OF THE STATE OF CALIFORNIA meets at San Francisco on April 20th, 21st, and 22d. The society now has a membership of three hundred and thirty-eight, and is in a very prosperous condition.

A SMALL OPERATION WITH A LARGE NAME.—"Porotomy" is the name given the operation of cutting the meatus.

THE LADIES' HEALTH PROTECTIVE ASSOCIATION of this city has now six hundred members, having increased from seventeen members in two years. Its work this year will be devoted principally to tenement-houses and street-cleaning.

THE DIFFICULTY OF DISINFECTING THE ALIMENTARY TRACT.—Furbringer has recently shown that the number of micro-organisms per cubic millimetre in the fæces of typhoid-fever patients who are taking naphthalin is ninety thousand. Other antiseptics appear equally unequal to the task of really disinfecting the intestinal contents.

THE SOUTH CAROLINA STATE MEDICAL ASSOCIATION held its annual meeting at Aiken on April 12th.

TALMUDIC MEDICINE.—Regarding the proposal to publish a work on this subject, a correspondent writes us that there already exists such a work in French. It is entitled "La Médicine du Talmud," and is, we are informed, pretty poor reading.

THE MISSISSIPPI STATE MEDICAL SOCIETY meets at Jackson on April 12th. An interesting programme of work has been prepared.

SIR SPENCER WELLS has gone to the Canary Islands for his health.

TWO MISUSED WORDS, according to Dr. Sankey, are prodroma (of which the plural, often used, is prodromata), and calvarium. The Greek and the Latin word is *prodromus;* plural, *prodromi* (Dunglison, Webster). Calvaria is a feminine noun; plural, calvariæ.

SALICYLATE OF LITHIA.—Dr. Vulpian states that salicylate of lithia is more efficacious than salicylate of soda in cases of acute and progressive subacute articular rheumatism. It also has some effect in chronic cases when a certain number of the joints are still deformed, swollen, and painful. Four to four and a half grammes, and even five grammes, may be given in a day. If the improvement is not lasting, fifty centigrammes may be added to the daily dose. Sometimes, when the dose is increased to five or five and a half grammes, symptoms of intolerance begin to be shown. Salicylate of lithia may be given dissolved in water, in powder, or in unleavened bread, during or after meals, in doses of fifty centigrammes. The physiological effects of the drug are headache, giddiness, and deafness.—*British Medical Journal.*

THE TOWNSEND PAVILION.—The corner-stone of the new surgical pavilion for laparotomy, at Bellevue Hospital, was laid on April 11th, with appropriate ceremonies.

THE VASSAR BROTHERS' HOSPITAL, at Poughkeepsie, was opened for visitors on the 11th. It contains forty beds. The property is valued at $125,000, and has an endowment of $300,000. Dr. Guy C. Bayley is resident physician.

SWALLOWING ARTIFICIAL TEETH.—A correspondent of the *British Medical Journal* reports a case in which the patient swallowed a plate with artificial teeth, and safely passed them *per rectum* a few days later. Another correspondent says: "A patient of mine recently swallowed a plate (gold, with two teeth), and I immediately adopted a practice recommended to me some years ago by Sir James Paget in a similar case. I made him eat three good-sized slices of bread, and swallow four tablespoonfuls of flour and water made into a fairly thick mass. I then administered an emetic, and the teeth returned entangled in the tenacious vomit. I may add that the first case was equally successful, and that something of this sort is habitually done at police-stations when prisoners arrested for passing false coins swallow them."

A PSEUDO-ATROPHY OF THE OPTIC NERVE is said to exist, by Dr. Trousseau, of Paris. It is due to toxic influence, and is diagnosticated from true atrophy by the use of pilocarpin.

An Official Decision regarding the Printing of the Title "Doctor" on United States stamped envelopes, postals, etc., has recently been rendered. A physician of this city ordered one thousand stamped envelopes printed with the prefix "Dr." before his name. The New York Post Office refused to allow the prefix to be used, holding that it advertised his calling. On appeal to the Washington authorities the decision was overruled, and the doctor was allowed to have his envelopes printed as he desired. The decision is manifestly the just and correct one, and we are glad to place it upon record.

The Fourth Annual Meeting of the American Climatological Association will be held in Baltimore, Tuesday and Wednesday, May 31 and June 1, 1887, and will immediately precede the meeting of the Association of American Physicians, to be held in Washington.

Memorial to the Late Surgeon Ambler, U.S.N.—The medical officers of the navy have just had completed a beautiful tablet in bronze, commemorative of the heroism of Surgeon J. M. Ambler, who perished with De Long and his companions in the Lena Delta in 1881.

At the Commencement of the Buffalo Medical College the degree of M.D. was conferred upon a class of fifty.

Reviews and Notices of Books.

Principles of Hygiene for the School and the Home. By Ezra M. Hunt, A.M., M.D. Pp. 377. New York and Chicago: Ivison, Blakeman, Taylor & Co. 1886.

The writer has had no easy task to write upon hygiene in such a manner as to bring it within the comprehension of school-children. At the same time he conscientiously sets himself about the still more difficult task, that of bringing to the knowledge of his pupils enough of the anatomy and physiology, which forms the basis of human hygiene, to make it comprehensible to them. To say that he has been successful is to award him great praise, but he deserves it, since he has presented his subject scientifically, clearly, and simply.

A Manual of Obstetrics. By A. F. A. King, A.M., M.D. Pp. 379. Philadelphia: Lea Brothers & Co. 1886.

The fact of a third edition of this work shows that it is appreciated by students, who regard it as helpful in fixing the aphorisms of obstetrics for examination and for future use.

On Fevers: Their History, Etiology, Diagnosis, Prognosis, and Treatment. By Alexander Collie, M.D., Aberdeen. Pp. 288. Philadelphia: P. Blakiston, Son & Co. 1887.

The author of this little volume writes clearly, concisely, and authoritatively upon the subject of fevers, as is the right of one who can state in the preface that his observations for the most part are founded upon over twenty-one thousand cases which he has personally treated from commencement to termination. The plates of the lesions of the enteric bowel and the eruption of variola nigra are creditable specimens of medical illustration, and show a great advance in this line of work.

Transactions of the American Surgical Association. Vol. IV. 1886.

Among the number of valuable papers presented in the present volume, the most able, scientific, and in a manner most valuable, is Dr. Lerna's contribution to the subject of "The Surgery of the Pancreas." Prefaced with a study of the embryological development of the pancreas, there follows a discussion of its anatomical and pathological structure, with a working up of its physiological functions, illustrated with elaborate experiments on animals; the paper concludes with a review of the diseased conditions of that organ and a report of the cases in which surgery has been employed, and the results of the same. The whole forms a remarkable monograph in this new and almost unexplored surgical field.

The opening address by the president, Dr. Moses Gunn, on the "Union of Nerves of Different Functions," is also extremely interesting. In it he proves that the function of a given nerve depends entirely upon the machinery at its end, and not upon any intrinsic quality.

Dr. Johnston's paper on "Diagnostitial Laparotomy" recommends that the operation should be more extensively employed in obscure cases, especially intestinal cases, in which life might sometimes be saved by it.

A valuable contribution to science is the paper on the "Bacteria of Surgical Diseases," by Dr. Harold C. Ernst, of Harvard.

A Compend of Electricity, and its Medical and Surgical Uses. By Charles F. Mason, M.D. Pp. 108. Philadelphia: P. Blakiston, Son & Co. 1877.

This forms the third volume in the series published by the above firm under the title of "Medical Briefs." The statements of the uses of electricity and all of the definitions are given in the most succinct manner. In fact, in some instances lucidity is sacrificed to brevity, and it is doubtful if one who had recourse to no other authority would get on very well in all of the practical applications of electricity without further directions than are given in this book.

Massage as a Mode of Treatment. By William Murrell, M.D., F.R.C.P., Lecturer on Pharmacology and Therapeutics at the Westminster Hospital; Examiner in Materia Medica in the University of Edinburgh, and to the Royal College of Physicians of London. Second edition. London: H. K. Lewis. 1887.

We noticed the first edition of this instructive little treatise a few months ago, and the fact that a second edition has been so soon called for is an evidence of the favor with which the book has been received. The work has been largely rewritten for this edition, and many cases recently under the author's observation have been added.

The Truth about Alcohol. By Robert Alexander Gunn, M.D. Chicago and New York: Belford, Clark & Co. 1887.

In this little book the author discourses pleasantly about alcohol, its uses and abuses. It would be an excellent tract for prohibitionists to read, and would perhaps have the effect of inclining them to look with a little charity on those who do not hold in every minute point to their own extreme views.

Physician's Clinical Case and Record Book. San Francisco: William S. Duncombe & Co. 1887.

A printed list of symptoms and attributes of a patient to be examined is a very great aid in systematic case-taking. It is especially valuable to a physician just learning the art, for he is sure to find, without such assistance, that he has forgotten to inquire about some region of the body or to bring out some symptoms which are essential to the proper understanding of the case. The Clinical Note-Book will thus be found very useful.

THE SCIENCE AND PRACTICE OF SURGERY. By FREDERICK JAMES GALT. Vols. II. London: Published by Baillière, Tindall & Cox. 1886.

THE third edition of Gaut's Surgery comes to us, revised and enlarged, with more than two thousand pages and one thousand and ninety illustrations. The writer has been able to treat his subject in the most exhaustive manner. It is topographically very fine. If any criticism were to be given, it might be relative to the style, which is somewhat discursive. For example, in speaking of erysipelas, he announces, "any *repressive* application would be obnoxious; not only as tending to divert the natural course of the disease in the elimination of the blood-poison, but as possibly repelling the inflammation to some other part, its migration or metastasis being perilous and prolonging the disease. In both these respects the cutaneous inflammation of erysipelas is analogous to an attack of gout." This paragraph is one of a number selected at random. It is only a writer who has two thousand closely printed pages to hold his ideas that can allow his pen such garrulity; the other factor to be considered is the patience of the reader. The two being equal, the result is a success.

CONGRÈS PÉRIODIQUE INTERNATIONAL DES SCIENCES MÉDICALES. Vols. IV. Copenhagen. 1886.

THE Eighth International Congress leaves its impression upon the medical world in the shape of four large volumes filled with the papers presented to this august body. The papers are published in French, English, and German, according to the mother tongue of the writer. Aside from the social enjoyment and the great gratification which arises from coming face to face with the foremost medical men of the age, men who have long made a wide circle of acquaintances by means of their erudite and scientific pens, the results of this Congress are crystallized before us in this *Compte-rendu*.

Many of the subjects, even in so short a time as since 1884, have been discussed and views modified; such is the case with the paper read by Pasteur on "Microbes pathogènes et Vaccins."

The Section on Anatomy contributes, perhaps, as little of general interest as any of the sections, many of the papers touching on minor points. As physiology differs from anatomy in still offering a wide field for experimental research, at such a meeting as this opportunity is afforded for giving the results of experimental investigation, and the student will turn to these with great profit and interest. The same is true of the work done in the Section of General Pathology. So each specialist will find that the knowledge of his department is amplified and increased by the many able papers contributed.

The whole large work impresses the reader with the benefit which accrues to the medical profession from this periodical interchange of national ideas, as well as the promotion of good feeling and the unity of interests and endeavors of those who practise the art of healing.

A TEXT-BOOK ON SURGERY: General, Operative, and Mechanical. By JOHN A. WYETH, M.D., Professor of Surgery in the New York Polyclinic; Surgeon to Mount Sinai Hospital; Consulting Surgeon to the Yorkville Dispensary and Hospital for Women and Children; to the Woman's Hospital of Brooklyn, etc. New York: D. Appleton and Co. 1887.

WE turned to this book with a feeling of weariness, for it seemed as though there were enough works on general surgery to satisfy the most ardent seeker after knowledge, or to instruct the most ignorant of would-be practitioners, but we confess that we were disappointed—very agreeably disappointed. The writer has succeeded in the very difficult task of creating a want, where no want was felt, and then of satisfying it. In a work of this kind, embracing the entire range of surgery, with the exception of operations on the eye, the author cannot, in seven hundred and sixty pages, discuss unsettled theories or compare methods, and he must necessarily be somewhat dogmatic. But this is compensated for by clearness of description and preciseness of language—qualities of essential importance in the writer of a text-book of this nature. The illustrations are numerous and excellent; and those in the section on Ligation of Arteries are worthy of special commendation. In those the arteries and veins are shown in colors, and each part is, when necessary, distinctly labelled in place, thus doing away with the ordinary figures or letters, with the references in the text, which are better calculated to confuse than to aid the reader in his comprehension of the cut. We are sorry to see that the author has followed the too prevalent custom of adding to his name a string of titles, some fifteen or more in number, having, for the most part, little or no bearing upon his qualifications as a teacher of surgery. An author's work speaks for him, and it adds nothing to his estimation in the minds of his readers to inform them, on the title-page, that he is a member of the New York County Medical Society, or an honorary member of the College of Physicians and Surgeons of Little Rock. This is, however, our only criticism, and, of course, detracts in no way from the intrinsic value of the work, which is of superior merit, and which no one who is ever called upon to treat surgical cases can well afford to be without.

THE PRINCIPLES AND PRACTICE OF OPERATIVE SURGERY. By STEPHEN SMITH, A.M., M.D., Professor of Clinical Surgery in the University of the City of New York; Surgeon to the Bellevue and St. Vincent Hospitals, New York; Consulting Surgeon to St. Elizabeth's Hospital, etc. New and thoroughly revised edition. 8vo, pp. 877. Philadelphia: Lea Brothers & Co. 1887.

A BOOK which is fully in harmony with the spirit of the times, and one which will be appreciated at a glance by every practical surgeon. Those who are engaged in other lines of medical work can refer to it with great advantage, in order to learn what surgeons are doing nowadays. Its sharply defined lines of description make it a very easy book to read, and the author's plan of quoting the names of authorities in the margin only, and including their ideas in an unbroken text, will avert interruption and confusion.

The author, in a chapter devoted to the subject, shows just why the surgeon is under obligations to practise surgery according to actual antiseptic methods, and we presume that the law courts will make this a book of reference in malpractice cases in which patients have not received the attention which is now demanded of operators. Consequently a study of the work will be profitable in more ways than one.

The details of antiseptic surgery, as practised at three of the most progressive centres of the world—Billroth's Clinic, Lister and Cheyne's Clinic, and Bellevue Hospital—are described in such a way as to make the matter a most valuable feature of the work. The busy general practitioner and the student will appreciate the brief completeness of the author's style.

The surgery of the brain and of the abdomen is advanced in the work to the farthest point recognized by the best authorities at the present date, and we can say with confidence that Professor Smith's practical arrangement of points will do much to throw into disrepute the unfortunate plan of treating so many wounds of the brain by the expectant method.

All of the subjects which interest the general surgeon are handled in a way which would be expected of the author, and his adaptation of recent scientific points in the breezily progressive surgery of to-day is highly satisfactory.

The volume is a handsome one as to type, paper, illustrations, etc., but is nevertheless not expensive. It contains upward of two hundred more pages and illustrations than the former edition.

Reports of Societies.

NEW YORK PATHOLOGICAL SOCIETY.

Stated Meeting, February 23, 1887.

T. MITCHELL PRUDDEN, M.D., PRESIDENT, IN THE CHAIR.

THE REPORT FROM THE COMMITTEE ON MICROSCOPY,

on the uterus and its appendages presented by Dr. H. J. Boldt at the last stated meeting, was submitted, as follows:

Sections were made from one of the retro-peritoneal glands. Its perivascular spaces were found to be irregularly dilated, and packed full of irregularly shaped epithelial cells. The epithelial cells within the alveolar spaces were not separated by any intercellular substance, and they had no definite arrangement. Between the masses of cells the fibrillated connective tissue was increased in thickness, and infiltrated with new cells. Carcinoma.

G. C. FREEBORN,
WILLIAM H. PORTER.

ACUTE ANTHRACOTIC PNEUMONIA.

DR. WILLIAM H. PORTER presented sections made from the lungs removed from a case of acute anthracotic pneumonia, with the following report:

Upon microscopical examination, the interlobular connective tissue was found to be very much thickened and in a state of œdematous infiltration. This thickened tissue was also infiltrated with inflammatory cells, also small and large round connective-tissue corpuscles. That this very apparent interstitial thickening was chiefly œdematous in character was proved by its rapid decrease in passing the sections through the absolute alcohol.

The air-vesicles were filled with the ordinary inflammatory exudation common to lobar pneumonia, the larger portion of which was in the stage of gray hepatization, but a few of the air-vesicles still contained a delicate reticulated net-work of fibrillated fibrin.

The most interesting point was the very large amount of black and apparently inorganic pigment which was found in large quantities in the inflammatory exudation into the air-cells, while the interstitial tissue contained comparatively little.

No pneumococci could be found. In these cases both the interstitial and intravesicular inflammation apparently was due to the large amount of inorganic pigment drawn into the lungs. In these particular instances the evidence is strongly against an infection or germ as the cause of the pneumonic process, and most decidedly favors a direct injury as the causative agent.

PISTOL-SHOT WOUND OF THE BRAIN.

DR. PORTER presented a second specimen, with the following history: Male, twenty-three years of age, German, who had been to a ball the night before. He returned early in the morning, and shot himself without apparent cause. Death followed in about two hours from hemorrhage.

At the necropsy the track of the ball was found to be from right to left completely through the skull. The direction was such that both right and left middle meningeal arteries were divided. The bullet-holes in the bony walls were about three-eighths of an inch in diameter, while that through the brain-substance was about one inch in its diameter. The course of the ball through the brain was from right to left, just in front of and below the lateral ventricles. There was a stellate fracture at the vertix, and both orbital plates were fractured; also the occipital bone on both sides of the foramen magnum. The special points of interest were the complete division of the middle meningeal artery upon both sides; the small bullet-hole in the skull, and its large diameter through the brain-substance; the slight amount of intracranial hemorrhage, and the large number of cranial fractures.

TRICUSPID AND BICUSPID INSUFFICIENCY—AORTIC STENOSIS — CARDIAC DEFORMITY — INTERSTITIAL PNEUMONIA—AND INTRALOBULAR CIRRHOSIS OF THE LIVER.

DR. PORTER presented a third specimen, with the following history by Dr. William A. Moore, house physician:

C. R. H——, twenty-four years of age, was first admitted to the service of Dr. A. H. Smith, at the Presbyterian Hospital, January 8, 1887, and later to the service of Dr. William G. Thompson. He gave a family history of both phthisis and cardiac disease. He has had repeated and severe attacks of rheumatism; the last, which was unusually severe, occurred five years ago. He has also had pleurisy and typhoid fever. For a number of years he has suffered with dyspnœa and cardiac trouble. The present sickness commenced December 19, 1886, as a severe cold. When admitted he was very anæmic and considerably emaciated. His feet and legs were œdematous.

Physical examination revealed a dilated, a rapid and tumultuous heart's action, and a widely diffused apex-beat. Upon auscultation a distinct bicuspid and tricuspid regurgitant murmur was heard; also a slight aortic obstructive murmur. There was marked jugular pulsation.

The patient gradually sank, and died from exhaustion and cardiac failure.

Necropsy twenty-four hours after death. Body very much emaciated; rigor mortis marked.

Thoracic cavity: The pericardial sac was completely obliterated by an old and fibrous pericarditis.

The left auricle was dilated and its walls very much thickened. The endocardium looked like dense white, fibrillated connective tissue. One segment of the mitral valve was shortened and bound down to the ventricular wall. The opposing segment was elongated and thickened.

The left ventricle was about normal in size, but its muscular wall was thin and degenerated. The segments of the aortic valve were the seat of numerous small vegetations. The aorta was the seat of extensive endarteritis and fatty infiltration.

The cavity of the right ventricle appeared to be very much diminished in size; the segments of the tricuspid valve shortened and adherent to the cardiac wall, thus nearly obliterating their usefulness. The right auricle was very much dilated, its endocardium in a state of fibroid thickening similar to that of the left auricle. The muscular coat was greatly thickened and reticulated. Both lungs were firmly bound to the chest-wall by old pleuritic adhesions. There was a marked interstitial thickening, some congestion and œdema of the pulmonary substance, also a few zones of broncho-pneumonia.

Abdominal cavity: The *spleen* was normal in size. Its capsule was thickened by fibrous patches. The *kidneys* were the seat of a moderate amount of chronic diffuse nephritis. Their pelves were the seat of punctate hemorrhages and were deeply congested. Weight of each six ounces.

The *liver* was enlarged, weighing sixty ounces. Its external surface was covered with patches of fibrillated connective tissues, and fringes of the same hung from its external surface in many places. There was a marked intralobular cirrhosis, and numerous microscopic gummy formations in the intralobular spaces.

The chief points of interest are those in connection with the heart, viz., extensive lesions upon the right side are very uncommon. Out of two thousand necropsies only two have given evidence of primary changes on the right side. As a late secondary lesion to organic valvular changes on the left side, a degeneration and dilatation

of the right ventricle causes both pulmonary and tricuspid insufficiency. But organic changes causing valvular lesions of the right side are extremely rare. From the almost universal absence of any organic valvular change in the pulmonary and tricuspid valves, and from the well-known physiological fact that the tricuspid valves are always insufficient, we can, practically speaking, exclude valvular lesions of the right side of the heart when making a physical examination of the heart.

MULTIPLE AND RETAINED GALL-STONES—PARENCHYMATOUS METAMORPHOSIS OF THE LIVER AND KIDNEYS—MARKED JAUNDICE.

DR. PORTER presented a fourth specimen, with the following history abstracted from the very complete one taken by Dr. William A. Moore, house physician: Mrs. M. F——, aged thirty-two, Irish, laundress, was admitted to the service of Dr. William G. Thompson at the Presbyterian Hospital. There was a clear history of repeated attacks of biliary colic and severe facial neuralgias, otherwise her previous history was good. Her present attack commenced on February 1, 1887, with a severe pain in the right side, and the next day she commenced to menstruate. The pain continued, but was intermittent in intensity. Two days before entering the hospital she had a severe chill, followed by a high fever.

February 12th she was admitted, and was found upon examination to be a large and very fleshy woman, the skin had an ashy hue, and she had every appearance of being a very sick person. The conjunctivæ slightly jaundiced; none of integument. Physical examination negative.

She remained in the hospital until February 21st, with symptoms which pointed toward occlusion of the common bile-duct, such as biliary colic, progressive jaundice, clay-colored stools, and high-colored urine. There were frequently repeated chills. The temperature ranged between 100° F. and 107° F., but most of the time it was above 103° F. It rose after each chill, but would fall for a time after thirty grains of antipyrin were taken.

General sponging of the body kept the temperature more evenly down.

On the 17th exploratory aspiration of the hepatic region, but no pus was obtained.

On the 19th albumen appeared in the urine, followed the next day by casts. The amount of urine voided was fair in quantity. Stimulants were freely administered, but all the symptoms grew worse. Her mental faculties remained clear to last, but heart gradually failed, and death appeared to be due to uræmic poisoning, œdema of the lungs, and cardiac paralysis.

Necropsy twelve hours after death. Rigor mortis marked. Body deeply stained yellow, as were all the tissues. Adipose tissue abundant. Thoracic cavity: The pericardial contained one-half ounce of yellow, serous fluid. The heart was soft, flabby, and its cavities dilated; weight twelve ounces; valves normal. Microscopically the muscular fibres were found to be in an advancing state of granular metamorphosis. The left lung was slightly adherent to the chest-wall, but there was no fluid in its pleural cavity; weight eighteen ounces. The right lung was slightly bound to the chest-wall at its apex by old adhesions. At the ninth intercostal space, about midway between the axillary and anterior scapular line, there was a marked patch of punctate subserous ecchymosis, with a slight amount of blood-stained fibro-plastic exudation. The same condition was noticed in the pulmonary and diaphragmatic pleura. There were a few ounces of blood-tinged serum in the right pleural cavity; weight of right lung eighteen ounces. Both lungs were congested and œdematous. Abdominal cavity: The peritoneal cavity contained about one pint of fluid blood and about the same amount of blood-clot. This firm clot lay between the liver and the posterior abdominal wall. There was also considerable retro-peritoneal hemorrhage. There was no peritoneal inflammation. The spleen was large and soft; weight ten ounces. Kidneys: Both glands were very much enlarged and softened; their capsules non-adherent. The cortex was thickened, the markings straight. Upon microscopic examination the epithelium was found to be in an advancing stage of granular metamorphosis. There was no evidence of an inflammatory action, but there was considerable bile-pigmentation. There was a granular condition of the os uteri, also an inflammation of cervix and fundus uteri. There was cystic degeneration of both ovaries, also a pedunculated fibroid of the fundus, one inch in diameter; alimentary tract normal. The duodenum was opened in situ, and the common bile-duct found to be patent, but just within its orifice it was widely dilated. All the hepatic tributaries were dilated, and contained small gall-stones. The gall-bladder was thickened and punctated. The gall-bladder and the hepatic tributaries contained in all eighty-six gall-stones, ranging in size from one-eighth of an inch to one inch or more in diameter. The liver showed marked parenchymatous change and granular metamorphosis, but no positive inflammatory or suppurating foci.

EXSECTION OF THE HEAD OF THE FEMUR.

DR. L. H. SAYRE presented the head of the femur and a portion of the acetabulum removed from a boy thirteen years of age. The operation was performed February 21, 1887. The family history of the patient was good, and he had always enjoyed a fair degree of health. It had been noticed, however, that all through his life he had walked with a peculiar movement about the hip, and, as described by his sister, "as if he had a wooden leg."

Three years ago he had a severe fall, striking upon his right hip, and two years ago his lameness had become so marked that he was sent to a surgeon on account of supposed morbus coxarius. After examination it was concluded by the surgeon that the case was one of reflex trouble, and the patient was circumcised. The improvement after the operation was very pronounced, and for eighteen months the boy walked about as he had always done before receiving the fall.

On last Thanksgiving Day, after exposure, he complained of slight pain in the hip, became somewhat languid, and at the end of six weeks a marked deformity was present, yet it differed from that seen in the third stage of hip-joint disease. The leg was slightly flexed upon the thigh and the limb was adducted across the middle third of the opposite thigh, but the foot was not rotated inward. There was slight tenderness on pressing the head of the femur into the acetabulum, but no tenderness on pressing the bone upward. There was slight motion at the joint, but it was apparently nearly anchylosed. The entire buttock on the right side was enlarged and indurated. At no time had the boy suffered from the pain usually associated with hip disease.

The diagnosis was probable

OSTITIS OF THE ILIUM, INVOLVING THE ACETABULUM;

the condition of the head of the femur was not made out satisfactorily. The patient was put to bed and made more comfortable by the adjustment of an extension apparatus.

About two weeks ago Dr. Sayre detected deep-seated fluctuation over the gluteal region. The patient had then begun to lose his appetite and to have irregular chills. Dr. Sayre then made an exploratory incision, and found an abscess from which he evacuated four or five ounces of pus, which was without débris and did not present the appearance usually shown by pus associated with dead bone. The capsule of the joint was ruptured, and, under anæsthesia, the movements of the joint were quite free.

At this stage of the operation it became a grave question whether to simply drain the abscess or to explore concerning the condition of head of the femur and, if necessary, perform exsection.

On manipulation, however, a small quantity of the

peculiar gelatiniform material seen with chronic bone-disease oozed from the ruptured capsule, and it was at once decided to exsect.

After the upper part of the femur was removed, it was found that the whole of the articular cartilage had been loosened from the head of the bone; and that the carious process had extended through the head of the femur entirely. The acetabulum was carious at the upper portion, and from about the insertion of the ligamentum teres he removed dead bone down to the internal periosteum, but did not enter the pelvis. The cavity of the abscess was cleaned out thoroughly, a drainage-tube was introduced, and the wound was closed. Since the operation the patient had been doing well; pulse, 100; and temperature, 99° F.

Dr. J. F. Ridlon cited a case which he saw first about five years ago, and in which recovery had taken place. He had been in the habit of treating these cases by other means than exsection, with the expectation of getting good results, hence he was specially interested in seeing the head of the femur removed at this stage of the disease. The symptoms, in his case, began with a little limp, following hemiplegic chorea, that continued without pain, tenderness, or reflex muscular spasm for nearly a year.

The case was watched very carefully by a competent orthopædic surgeon, and finally a traction-apparatus was applied. About one year and a half after the first symptoms were noticed, a small abscess was found in the gluteal region just below the great trochanter and behind, which gradually increased in size until it was as large as half a medium-sized orange, and then disappeared.

He mentioned the case for the sake of asking Dr. Sayre if he had seen abscess in the gluteal region except where there was perforation, as in his case, through the head of the bone rather than the capsule of the joint. His own belief was, and always had been, from clinical observation, that the abscess of hip-joint disease usually opened in front when it opened through the capsule, but when it opened through the bone the opening was outside of the capsular ligament, as in this case.

He would also inquire how long the abscess had existed when it opened. Four or five days ago he saw a case of hip-joint disease in which the abscess showed itself first in the anterior part of the thigh, one year ago last November. No apparatus was applied; the case was, substantially, let alone, and the abscess gradually increased in size until last Saturday, when it ruptured. At that time it occupied the upper third of the anterior portion of the thigh and the posterior part of the thigh to the extent of about half-way down to the gluteal region. It discharged only a very small quantity of pus, and on the following Monday fluctuation could not be made out. There had been no pain for a year and two or three months.

He regarded the absence of pain as of no importance at all in the early diagnosis of disease of the hip-joint. He believed that pain was one of the later symptoms of morbus coxarius.

Dr. Sayre said that the case had been under his observation about seven weeks. When he first saw it the entire gluteal region was enlarged and indurated, and fluctuation was detected about three weeks ago. He had seen cases of hip disease without pain, and he had been of the opinion that the disease began in the bone, rather than any of the other structures of the joint, and gave rise to extensive changes in the osseous tissue. He had seen a case like that mentioned by Dr. Ridlon, in which the abscess was apparently absorbed, and the reason why he operated in the present case was because the boy had marked constitutional symptoms. He had never exsected a joint in the condition shown by the specimen, and should look with great interest for the result of an early operation. The cases in which he had seen exsection had been those which were of many years' standing. According to his experience the abscess in hip disease almost always opened upon the thigh, either anteriorly or posteriorly.

ABSCESS OF THE LUNG SIMULATING EMPYEMA, IN A CHILD THREE MONTHS OLD.

Dr. L. Emmett Holt presented the lungs of a female child, in which the whole right lower lobe was converted into an abscess-sac with a thin wall.

The history was as follows: The child, an inmate of the New York Infant Asylum, was first seen on October 23, 1886, it having been ill three days with pulmonary symptoms. The temperature had varied between 102° and 103.5° F. There was cough and accelerated respiration. Physical examination showed exaggerated resonance and respiration over the left lung, with a few coarse râles. On the right side the râles were finer, the breathing in places broncho-vesicular, and over the whole lung behind there was a shade of dulness. It was noted as being questionable.

On the eighth day the temperature, which had remained uniformly at the height mentioned (102° to 103° F.), fell to 100° F., and for the week succeeding scarcely rose above 101° F. The examination of the lungs on the eighth day showed on the left side only exaggerated resonance and respiration. On the right side there was moderate dulness, back and front, with diminished respiratory murmur over the lower lobe, and bronchial breathing at the apex.

He did not see the child again until the seventeenth day, when the house physician called his attention again to the case, as the "broncho-pneumonia" (this had been the diagnosis up to this time) was not clearing up well, and the temperature had risen to 102° F. again. The general condition was excellent, however; the child was plump and well nourished, nursed well, had only a moderate cough, slight looseness of the bowels, but no night-sweats. One would not have suspected from the facies and general appearance that anything ailed the child.

The physical signs found now were, flatness over the lower three-fourths of the right lung, front and back; this line of flatness varied also with position; there was absence of respiration over this part, and bronchial breathing at the apex. The apex-beat could not be made out to be displaced. An aspirator was introduced near the inferior angle of the right scapula, and, much to the surprise of all present, the effusion was found to be purulent. Nearly three ounces of healthy pus was evacuated; it was odorless.

Four days later, on the twenty-first day, the signs pointed to refilling of the chest, and the aspirator was again introduced, but only half an ounce of pus could be obtained.

The general symptoms were not specially changed during this interval; the temperature remained low until the twenty-fourth day, when it rose rapidly until it touched 105° F. Symptoms of great dyspnœa, cyanosis, and prostration developed, and the child died during the night. When these new symptoms developed, the house physician twice introduced the aspirator needle, but obtained no pus.

Autopsy.—Body well nourished; head not opened.

Thorax.—On removing the sternum, the left lung was found collapsed and compressed; the chest was nearly filled by the right lung, which extended two inches to the left of the sternum, overlapping and slightly displacing the heart. There were tolerably firm adhesions over the whole right lung, but no effusion whatever in the pleural cavity.

THE DIAPHRAGM WAS DISPLACED DOWNWARD.

On the lungs being removed, the right lower lobe was found greatly enlarged and had a fluctuating feel. On being incised, about three ounces of thick pus escaped. The lobe was hollowed out and consisted of little more than the wall of an abscess. Posteriorly the living tissue was thinnest, being scarcely two lines in thickness. At

no point was it much over one-fourth of an inch thick, except about the root of the lung. The inner surface of the sac was rough and irregular, and seemed to have no well-defined pyogenic membrane. The bronchi were carefully followed out, but no communication existed between any of them and the abscess. The right upper lobe was partly compressed and partly consolidated, some small patches of pneumonia being seen in its lower border. The left lung could be easily inflated, except at one or two patches of presumably old collapse. The bronchial glands were slightly enlarged, but not cheesy. The capacity of the abscess-sac was found to be about four ounces. The other organs showed nothing of importance—the heart was healthy; the intestines showed evidence of slight catarrhal inflammation; kidneys normal in size, slight cloudy swelling; liver somewhat fatty, not enlarged; spleen normal. No evidence of a suppurative process was found anywhere. The bronchi leading to the lobes of the right lung showed evidence of a slight catarrhal inflammation only. No foreign body was found, nor anything else to act as a local cause of the abscess.

The case, so far as the speaker's observation and reading went, was a very unique one, and the diagnosis made of broncho-pneumonia, followed by effusion into the pleura, seemed fully justified by the symptoms. It was difficult to see how the differential diagnosis between such an abscess and empyema could be made.

Dr. Frank Ferguson mentioned a case of abscess of the right lung, with a smooth limiting membrane, occurring in an adult. There was a granular condition of the pleural surface of the lung over the abscess, but not very extensive adhesion to the chest-wall, and the cavity had communicated with a bronchus which admitted a probe about one-tenth of an inch in diameter. He thought that it was primarily connected with this bronchus. The abscess was in the lower lobe, and in the upper lobe were numerous miliary tubercles.

Dr. Ferguson presented a specimen of

STRICTURE OF THE ŒSOPHAGUS,

occurring in a child two years and two months old, who was admitted into the New York Hospital on February 17, 1887. Her family history was good, and she was perfectly well up to three months prior to her admission, when she swallowed a small quantity of caustic potash.

Since then she had not been able to retain any food, but constantly vomited at every effort to eat or drink. Her appetite was very good; her bowels were constipated. On admission she was found extremly emaciated. Whatever was given her to eat or drink was retained only for a moment and then she passed her finger into her mouth and regurgitated what she had taken.

Auscultation revealed that the fluids and solids taken did not travel the entire length of the œsophagus.

The passage of a bougie was interrupted at about the middle of the tube. The child rejecting everything given her by the mouth, was put on nutritive and stimulating enemata, which she retained when given in small quantity.

During her residence in the hospital her temperature ranged below one hundred, and her condition was such that operation was not regarded as advisable. She died thirty-four hours after admission.

The *autopsy* revealed a stricture of the œsophagus, about its middle, two inches in length, and admitting a probe one-eighth of an inch in diameter. The œsophagus above the stricture was dilated; below it, normal. There was much thickening of the wall of the œsophagus in the neighborhood of the stricture.

The stomach was very anæmic, but otherwise normal. The other organs also were all anæmic, but otherwise normal. The body was greatly emaciated.

The Society then went into executive session.

NEW YORK ACADEMY OF MEDICINE.

SECTION IN OBSTETRICS.

Stated Meeting, March 24, 1887.

E. L. Partridge, M.D., Chairman.

Dr. Hubbard W. Mitchell read a paper entitled

OPERATION FOR STELLATE AND BILATERAL LACERATION OF THE CERVIX UTERI,

in which he spoke of the frequency of the occurrence, of the injury, of its forms, of the difficulty of recognizing it at the time of labor, of the possibility of absence of after-symptoms and of spontaneous healing, of the symptoms to which it may give rise as mentioned by Thomas, of the liability to the occurrence of epithelioma in consequence, described by Emmet, and then proceeded to describe the method of operating which he had practised, after preparatory treatment, consisting of cleansing the parts, scraping away all granular material with the sharp curette, the use of hot-water injections, and applications of solution of nitrate of silver, forty grains to the ounce.

He uses his own speculum, a modification of Sims', which is a Sims blade with two broad, separate wings, bent into such a curve as holds up the upper labium (patient in the Sims position, profoundly anæsthetized) and depresses the lower labium, and gives a wide vaginal opening through which to work. It has one large, movable handle, that can be attached to blades of various sizes. Having located the place where the future os is to be, he cuts away all unsound tissue. The circular artery is almost invariably divided. He uses interrupted silver-wire sutures, five or six to the inch, and threads the wire directly into the eye of the needle. He removes the sutures on the tenth day. Of the 113 cases on which he had operated union by first intention took place in 110. Of the 65 cases of bilateral laceration, pregnancy occurred subsequently in 8, and at the next labors—he attended them all—laceration occurred in only one, and there it was only slight.

Dr. C. C. Lee said that he had been favorably impressed with the paper, which contained an excellent exposition of the present state of knowlege with regard to trachelorrhaphy, but that he should be obliged to differ with its author concerning some of the details of treatment. He thought that the

LOCAL APPLICATION OF NITRATE OF SILVER

did more harm than good; weak solutions of iodine were more beneficial. He had never seen a needle that could be managed so well as the carrying-loop, in using silver-wire sutures. It had not been his experience that the circular artery had been divided in the operation in a greater proportion than one in twenty cases, and when divided he had regarded it as an accident rather than an almost necessary part of the operation.

Dr. Wylie could not agree with the general import of the paper or find very much in it to commend. He believed that to speak of laceration of the cervix as a disease was calculated to do harm and increase the number of operations, judging from the very large number of patients operated upon in so short a time by Dr. Mitchell.

A perfectly healthy, normal cervix is not likely to be lacerated. But if the cervix is imperfectly developed, or has been the seat of disease, it is very liable to be lacerated, and in such cases a slight laceration may cause a great amount of trouble. Simple laceration of the cervix, unless it destroys the sphincteric power of the uterus, does but very little harm, provided there is no disease of the glands or follicles and no sepsis following labor. He believed that Dr. Mitchell had operated in cases which could have been cured, probably, by treating the conditions which were complicated by the laceration of the cervix.

LACERATED CERVIX SHOULD NOT BE SEWED UP

until it gives rise to symptoms, and when it does produce symptoms there is some disease behind it that needs treatment.

Dr. Mundé would never operate on what had been called the stellate laceration, unless there were special symptoms referable to what had been known as the cicatricial plug, and he might not even then. The bifid laceration might require an operation, providing it gives rise to symptoms. He never considers a laceration with regard to operation unless it produces symptoms; its mere existence does not call for sewing it up, no matter how large it may be, or how much everted.

When the cicatricial tissue makes pressure deep into the cellular tissue, and is attended by pain and reflex symptoms, the operation is justifiable. When the eversion is large, the menopause is not far off, and there is free discharge, he would operate, because of the liability to the development of epithelioma. He did not agree with Dr. Chadwick, of Boston, who had recently published that there was no danger of epithelioma developing from lacerated cervix, simply because he had had cases that proved to the contrary, and had no doubt that

THE LACERATED CERVIX IS MORE LIABLE TO BECOME THE SEAT OF MALIGNANT DISEASE,

if the eversion and erosion, etc., are sufficient, than is the cervix that is not in a torn condition.

He regarded it as a mistake when the circular artery was cut. He thought that in about ten per cent. of the cases the operation failed. He also regarded five or six sutures to the inch as more than was necessary. He utterly condemned placing the external os anywhere except where it belonged, and where it could receive insemination.

Dr. A. F. Currier agreed with the conservative remarks of the last two speakers, and had found that he declined more and more to perform the operation. He regarded five or six sutures to the inch as too many, and very liable to interfere with proper circulation.

Dr. Mitchell, in closing the discussion, said that only a few applications of nitrate of silver were required, hence its deleterious effects need not be produced. Where the case demanded an operation, it should be performed without much delay. He thought it was understood by all that the operation should not be performed unless called for by symptoms. He had not been able to give much relief without, in most cases, an operation to restore the contour of the cervix; but by cutting away these follicles and granulating tissue, reaching healthy tissue, and then closing the wound with silver-wire sutures, he had cured his patients.

He was unable to see how Dr. Mundé could cure a case of stellate laceration of the cervix without first cutting away all the torn tissue completely, and converting it into a straight, large, open wound.

TUBAL PREGNANCY.

Dr. Wylie opened the discussion on this subject by briefly narrating three cases. The points which he made were, that it was difficult to make a positive diagnosis; that if made, electricity should be used, but that if it failed he would operate at once; that if he had the placenta to deal with he would, if he could feel sure that he could do so perfectly, tie off the blood supply, and then remove it.

Dr. A. F. Currier, on behalf of Dr. J. E. Janvrin, read the history of a case and exhibited the specimen. Dr. Janvrin would perform laparotomy whenever the first symptoms of internal hemorrhage occurred. The primary rupture—which occurs in the superficial artery without rupture of the sac—which is sure to be repeated, is the cause of the colicky pain-collapse and other grave symptoms, and indicates

THE PROMPT PERFORMANCE OF LAPAROTOMY.

Even before symptoms of rupture develop, he would urge the performance of laparotomy.

Dr. J. West Roosevelt presented a specimen without history other than than it was removed from the body of a woman who died, in Roosevelt Hospital, of syphilitic tumor of the brain. The fœtus was between six and seven months old, and had changed into a condition resembling

ADIPOCERE.

The tumor had been carried for many years, and had not given rise to symptoms.

Dr. P. F. Mundé gave a brief history of three cases of tubal pregnancy; of extra uterine fœtation he had seen six cases. He believes that a positive diagnosis can be made, notwithstanding the stricture placed by

MR. LAWSON TAIT ON DR. COE'S PAPER,

in which he said that it could not be done, and then modified it by saying that he wished to say that he had never seen such a case. He regarded

TYMPANITES AS A GRAVE COMPLICATION

He would not operate at once, but would wait a little in primary rupture, and be governed by the general condition of the patient. He regretted that he did not perform laparotomy in one case.

Dr. J. Lewis Smith exhibited a specimen removed from the body of a woman, whom he saw with Dr. Griswold, and who was suddenly attacked with severe pain in the lower part of the abdomen, but without vomiting, and did not go into

COLLAPSE UNTIL ABOUT SIX HOURS AFTERWARD.

She died sixteen hours after the occurrence of the rupture. Her catamenia had continued throughout her pregnancy.

Dr. Brown, of the Carnegie Laboratory, who made the autopsy and had examined the specimen, reported that there was a large quantity of blood in the peritoneal cavity, but there was *no evidence of peritonitis*. The interesting features of the specimen were the presence of a decidua, the extreme thickening of the walls of the uterus, and the extreme thinness of the walls of the sac at the site of the rupture. As to

THE PRESENCE OF THE CATAMENIA,

Dr. Wylie said that this was a symptom that could not be depended upon, and The Chairman remarked that irregular discharges of blood were commonly present, but it was believed generally that true catamenia were absent.

Dr. R. A. Murray then presented a specimen of

RUPTURE OF THE UTERUS.

It was interesting from the fact that an absolute diagnosis was not made. The woman was twenty years of age, single, and a primipara. There was nothing special concerning her labor except the *absence of all the usual symptoms of rupture*. There were no violent labor pains at any time.

FORCEPS WERE USED,

because the fœtal heart could not be heard. After labor there were no symptoms pointing toward rupture. There was some pain in the abdomen, which became tympanitic, but the lochia were of a bright-red color and absolutely free from odor. However,

THE FACIES OF THE PATIENT INDICATED GREAT DEPRESSION,

and an examination was made, under ether, when it was found that rupture had occurred upon the right side at

the vaginal junction and had extended into the body of the uterus.

There was a fair amount of milk secreted. Up to the seventh day there was the history of moderate septicæmia, the highest temperature being 102° F. Death occurred several days afterward, and at the autopsy there were found

GANGRENOUS ENDOMETRITIS,

with swollen and œdematous tissues and diphtheritic exudation upon both uterine and vaginal surfaces.

Tympanites and a contracted pelvis prevented a proper examination until the fourth day after labor, when he was able to let out a large quantity of very fetid blood.

SEPTICÆMIA DEVELOPED NOTWITHSTANDING THE BICHLORIDE INJECTIONS,

and the fetor was controlled, but the patient died, as he believed, in consequence of the initial poisoning. He also believed that laparotomy would have given the patient a better chance for recovery.

DR. WYLIE said that in cases where the septic trouble was confined to the broad ligament, he would dilate freely, put in a drainage-tube, and wash out the cavity thoroughly.

DR. MUNDÉ would extract the child through the rent in the uterus from the abdominal cavity, if he could do so readily; if not easily done, or the placenta had escaped into the abdominal cavity, he would perform laparotomy for that purpose. If, however,

THE PERITONEUM OF THE UTERUS

was not ruptured, laparotomy should be left out of the question.

The Section then adjourned.

Correspondence.

NITRO-GLYCERINE IN THE TREATMENT OF EPILEPSY.

To the Editor of The Medical Record.

SIR: In the interesting discussion on the pathology and treatment of epilepsy, at the meeting of the New York Academy of Medicine, on March 3d, a report of which is published in your issue of the 19th, I was surprised to see no mention made of nitro-glycerine as a medical agent in this intractable affection.

My own experience with it is limited to a few cases, but the reports as to its value have been quite numerous, and are of such a character as to render further trials of it advisable.

In one of my own cases the result was most gratifying. A girl, fifteen years of age, of bad family history—her mother and grandmother having died insane—had been a sufferer from epilepsy for two years. Her general health was good and her menstrual functions properly performed.

I saw her first in consultation with Dr. Newman, of Orange County, Va., on November 1, 1885; she was then having convulsions almost every day, and sometimes twice in twenty-four hours. The bromides had been faithfully tried with but partial relief. She was at once placed upon nitro-glycerine, one drop of a one per cent. solution being given her three times a day. She had a convulsion on November 9, 1885, and did not have another until about November 1, 1886—the nitro-glycerine having been continued without intermission during the whole of this time. On November 13, 1886, I saw this young lady again; she had then had two slight convulsive seizures and had on several occasions been "dazed," as she expressed it. The dose of nitro-glycerine was increased to one drop and a half three times a day, and she has had no return of either the convulsions or the "dazed feelings" since.

In view of the fact that the *hygienic* management was precisely the same before and during the administration of the nitro-glycerine, it seems fair to attribute the benefit in this case to its use.

In another case the convulsive seizures were kept under control for some weeks; but it was impossible to induce the parents of the patient in this case to persist in the use of the remedy, they having been taught that epilepsy was incurable. In several other cases which have fallen under my observation there has been improvement, but there has not yet been a sufficient interval of time since the treatment was commenced to say what the ultimate result will be.

As is well known, nitro-glycerine produces a disagreeable flushing of the face when it is first taken, but this effect is very transient, and the slight headache which sometimes accompanies it is equally so.

WILLIAM C. DABNEY, M.D.

UNIVERSITY OF VIRGINIA.

New Instruments.

SOME NEW NASAL, PHARYNGEAL, AND LARYNGEAL INSTRUMENTS.[1]

BY S. SHERWELL, M.D.,

BROOKLYN, N. Y.

IN connection with my dermatological work I have to do with a not inconsiderable number of diseases of the upper air-passages, often certainly as syphilitic annexes, but far more frequently of the character of non-specific affections. At one clinic, that for skin and throat diseases at the Brooklyn Eye and Ear Hospital, I see about five hundred new throat and nose cases each year, which, together with private practice of the same kind, and duties in other hospitals, would bring the total amount to very considerably over one thousand fresh cases annually.

I have consequently had to meet, and get over as best I might, most of the difficulties that occur in these regions in the way of operative interferences; and although I have a fair array of instrumental armamenta for that special work, still I suppose no man has at his command all the special instruments made for help in such cases; and, in fact, sometimes, if not frequently, he is called upon to either modify some existing instrument, or to devise new ones (as I claim to have done in the instruments I now lay before you) to meet the exigencies of the existing situation or to supply deficiencies. The instruments in question, I hope, in many cases will serve to fill the traditional "long felt want," and I shall publish them as Sherwell's Nasal, Pharyngeal, and Laryngeal Scissors.

FIG. 1.—Nasal Scissors.

The nasal scissors are intended for removal of neoplastic growths, or hypertrophic tissue, from the anterior, or middle, or even the deeper portions of the nares, and consist of a pair of serrated blades similar to the alligator-tooth scissors, slightly concavo-convex, and with handles bent downward in the long axis so as not to obstruct the vision while operating.

The pair shown were made about five months ago, for operation on the nose, for the removal of hypertrophied turbinated tissue in the person of a well-known professor

[1] Read before the State Medical Society at its Annual Meeting on February 3, 1887.

of surgery, and succeeded in their purpose fairly well. It will be noticed that they are best adapted for the left nares—on that side the trouble was present in this case; but they can be, and have been, used for right nares by inverted handling. The notched teeth prevent slipping and pushing of the tissues away, as can be best demonstrated by cutting a piece of india-rubber with them, and then doing so with the ordinary smooth-scissor blades. It will be noticed, also, that the shanks of the handles are narrowest when the blades are open nearly, if not fully, to the greatest necessary extent.

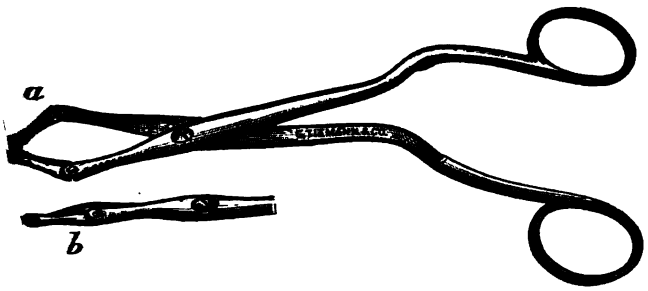


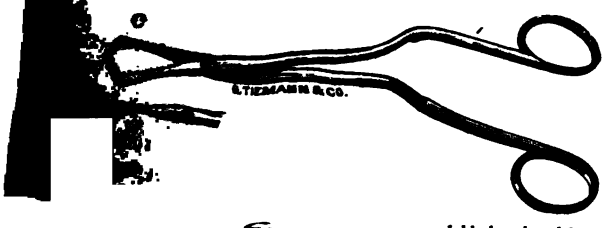
FIG. 2.—Pharyngeal Scissors.

Figs. 2 and 3, pharyngeal and nasal, I give in order of priority of make.

In Fig. 2 I have tried to construct an instrument capable of being used by anyone, however inexpert; that should run no risk of piercing the pharynx, or the important vessels back of the tonsils, etc., no matter what unguarded movements a nervous or intractable patient might make during the operation. This is intended to trim a pharynx, to cut out small, teat-like projections of a fretted or ragged tonsil, which are so often seen; and which are, from their size and shape, impossible to remove by the tonsillotome; and also as a most useful uvulatome. The advantage, so readily seen by the expert, of its needing no help with forceps, thus leaving one hand free for tongue-depression or for steadying the head of the patient, seems to me obvious enough; and it has certainly so proven in the relatively few cases in which, owing to its recent make, I have had an opportunity to use it.

The instrument, as will be noticed, is an absolutely pointless scissors, hinged about one-third of the distance from the extreme end, and thus composed, as will be seen, of four blades, but forming but two, as it were, by cutting at the hinge-joint as well, when the handles are closed. This is difficult to make satisfactorily, but the Messrs. Tiemann have surmounted this difficulty, and doubtless it will be even improved upon by their skilled workmen in the future.

The instrument when open, and it should be ordinarily introduced that way if the pharyngeal space is shallow, has an inside cutting surface something like the old Roman spear-head, the apex directed toward the operator; it needs but one word to explain why that is made so: This serves to thrust the enclosed tissues forward to the operator instead of away from him, as is the case with the ordinary curved or straight scissors.



[illegible] Blades open; *d*, blades closed.[1]

[illegible] merit of novelty at least, for [illegible] trument in which the cutting [illegible] same moment save in écra-

[1] [illegible]des are not made long enough; angle [illegible] considerably longer.

I have purposely given Fig. 3 out of its natural sequence, although it is intended for the same use as Instrument No. 1, *i.e.*, for the removal of hypertrophic and other tissues from any part of the anterior or deeper nares; I think it has many advantages over the first shown, but is more complex. It is, as will be seen, but a modification of the pharyngeal scissors just described, but is more delicate and has serrated edges. It will be noticed that the inside cutting edge is not that of the Roman spear, but rather that of an Indian arrow-head or javelin; this is accomplished, as is evident, by making the site of the hinged joint nearer the extremity of the blade. I operated with it on January 29, 1887, the day it came from the makers' hands, having reserved a patient with the growths above named; it worked very well. It needs no special instruction in its use, is absolutely free from danger, and causes, it may be said, no hemorrhage.

I think the instrument made a little stronger might be better.

The last instrument (Fig. 4), though it has, and must have, more limited use and a far narrower circle of users, I am somewhat enthusiastic over. Probably all laryngologists have been bothered (we may take the confessions of the most noted at least, that they have been) to get hold of and crush or cut, or both combined, those little or big neoplasms that occur, fortunately, relatively so rarely in the recesses of the larynx. I average three or four laryngeal tumors, I think, annually, and have a fair supply of Stoerk's, Mackenzie's, Schrötter's, Fauvel's, etc., instruments, but every now and then I have been exceedingly annoyed at the elusiveness of these little tumors situated on the vocal cords and elsewhere in that vicinity. I have sometimes tried all my own tools and borrowed others, and worked till my patience or that of the patient was exhausted; this is apt more particularly to be the case in and of those sessile outgrowths, papillomata, or what not, from one or the other vocal cord.

FIG. 4.—Laryngeal Scissors. *a*, Tube; *b*, sheath, cutting edge below slot; *c*, instrument retracted into sheath; *d*, sliding retractor-grip on wire.

The instrument now shown is then adapted to one of Schrötter's tubes and handles, and consists virtually of the same idea as that of the hinged and jointed four bladed scissors just as given in the preceding two, naturally very much lessened in size and with yet a differing lumen. The instrument is introduced closed into the larynx, allowed to expand by the automatic spring arrangement on pressing the wire attached to the finger-piece, and when, as the expert will know, it is at or about the site of the growth, is redrawn up into the tube, and into the slot in the tube, by retracting finger-pressure.

The instrument may not cut the growth off cleanly, but a very slight pushing and retracting will divide the tissues met with there. The cleanness of separation is of little consequence anyhow, for we know, as a matter of fact, that the nutrition of these small neoplasms once essentially interfered with by crushing or cutting, they tend to disappear, as do warts and such, by astringent and alterative applications being applied with the brush, etc.

I believe this instrument to be a good addition to the existing armamenta for laryngeal operation, and hope it

and the others will recommend themselves to the gentlemen more especially interested in such work.

Owing to its recent make I have had but one opportunity of using this instrument on a laryngeal growth; it succeeded then admirably. One point omitted in description of instrument is, that there is a screw-joint at junction of shaft and tube, permitting any degree of rotation of cutting surfaces.

I also believe that the principle of this hinged and pointless scissors would adapt itself well for use in some of the other mucous openings and cavities of the body. The four blades closing at once give it an essentially écraseur-like action, so that hemorrhage is usually extremely slight.

Army News.

Official List of Changes in the Stations and Duties of Officers serving in the Medical Department, United States Army, from April 3 to April 9, 1887.

HOFF, JOHN VAN R., Captain and Assistant Surgeon. Ordered for duty at Fort Reno, Ind. Ter. S. O. 43, Department of Missouri, April 4, 1887.

CORBUSIER, W. H., Captain and Assistant Surgeon. Granted leave of absence for one month. S. O. 35, Department of Arizona, March 29, 1887.

BURTON, H. G., Captain and Assistant Surgeon. Ordered to Plattsburg Barracks, N. Y., for temporary duty. S. O. 78, A. G. O., April 5, 1887.

LA GARDE, L. A., Captain and Assistant Surgeon. Ordered for duty at Fort Assiniboin, Mon. Ter. S. O. 78, A. G. O., April 5, 1887.

Medical Items.

CONTAGIOUS DISEASES—WEEKLY STATEMENT.—Report of cases and deaths from contagious diseases reported to the Sanitary Bureau, Health Department, for the week ending April 9, 1887:

	Cases.	Deaths.
Typhus fever	0	0
Typhoid fever	15	5
Scarlet fever	58	6
Cerebro-spinal meningitis	2	1
Measles	79	10
Diphtheria	82	33
Small-pox	6	4
Yellow fever	0	0

A DISPENSARY WHICH TRIES TO CORRECT THE ABUSES OF MEDICAL CHARITY.—In the recently published Seventeenth Annual Report of the Manhattan Eye and Ear Hospital, which now occupies the beautiful new building erected for it on Park Avenue, near the Grand Central Depôt, are to be found some facts of special interest. From it we learn that constant and vigilant efforts are to be made to exclude from the benefits of the hospital all who are not, by reason of poverty, deserving of gratuitous care. A registrar occupies a desk near the door, and asks the following, among other searching questions, of every applicant for treatment: "How much money have you in savings or other bank?" "How many persons are dependent on you for support?" "How much rent do you pay?" "Can you afford to pay anything for medical advice?" During the year just past two hundred and fifty-nine applicants were rejected after such inquiries, having acknowledged that they were able to pay. Moreover, after such inquiries have been made and satisfactorily answered, the beneficiaries or their friends are asked to contribute what they can to the treasury of the hospital; and it is of interest to learn that during the past year there was contributed by the acknowledged poor beneficiaries the sum of $6,614. All the money thus received was expended for the benefit of the hospital and dispensary patients.—Cor. *Am. Jour. S. and A.*

PROFESSOR SAINT GERMAIN, of Paris, for phimosis uses a pair of pointed forceps which he introduces as far as the meatus, and then spreads it until he can pass the gland through the opening. The operation is followed by less irritation than circumcision, and the results seem to be good. He is not a friend of the Jewish idea of the superfluity of the foreskin; in fact, he says that when you cut it away you have in a manner deformed the patient and deprived him of a tissue which he believes to contribute to the perfect healthiness of this most important gland.

DR. MARTIN, OF BERLIN, operates with a rapidity that is wonderful. I have seen him remove an ovarian cyst and close the wound in seven minutes, and have frequently seen him do the operation inside of ten minutes. He considers despatch a prime element of success, and thinks that Lawson Tait's idea of a small abdominal incision is an erroneous one. He thinks that too many assistants are bad, and tells of performing an ovariotomy entirely unassisted, those he depended upon being taken with a fainting fit and hence unable to perform their duty. —Cor. *Chicago Medical Journal.*

PROFESSOR BERGMANN is the most painstaking man I have seen operate, and his results are the best; that is, his wounds heal more uniformly without suppuration or constitutional reaction. He condemns the use of instruments with horn handles, believing that it is difficult to render them aseptic. I had the good fortune to attend his clinic during the college vacation, when he was lecturing to and operating for the instruction of the army surgeons. There is a feature about his operations that, in my opinion, plays a most important rôle, and that is the care with which he ligates every bleeding vessel, however small. For this purpose he uses only catgut, even to ligate the femoral artery.—Cor. *Chicago Medical Journal.*

A STATISTICAL VIEW OF THE TOXIC POWER OF IMPURE (AMYLIC) ALCOHOL.—To poison an animal with pure ethylic alcohol it requires as many times seven grammes seventy-five centigrammes as there are kilogrammes in its weight; whereas with pure amylic alcohol it would not take more than one gramme ten centigrammes per kilogramme. In other words, supposing a man weighing eighty kilogrammes, it would require six hundred and twenty grammes of ethylic alcohol to kill him, while with amylic alcohol it would take only eighty-eight grammes. These figures prove that people now become alcoholic with seven times less liquor than formerly.

PROFESSOR LANNELOGUE, in his lectures at the School of Medicine, treated, for the first part of the session, of injuries and diseases of the head, spine, and neck. For injuries of the skull he still adheres mainly to the use of the trephine, claiming that when the operation is performed antiseptically it gives good results. On the other hand, Bergmann has abandoned this instrument, and in a late number of *Volkmann's Vorträge* he takes occasion to discuss this subject in a most thorough manner, showing that by substituting the hammer and chisel immensely better results are obtained. In speaking of Pott's disease of the spine Professor Lannelogue says that the microscope has settled the question as to its tuberculous origin. As to the plaster-of-Paris jacket of Sayre, he says that the idea of keeping the two diseased surfaces separated by this appliance is irrational and impracticable. He puts his patient in a horizontal position and keeps him there for months together, taking him in the open air as much as possible to preserve the general health.—Cor. *Chicago Medical Journal.*

The Medical Record

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Original Articles.

ON THE PROPER SELECTION OF CHLOROFORM OR ETHER AS AN ANÆSTHETIC.

BY ARPAD G. GERSTER, M.D.,

NEW YORK.

THE question of safety in anæsthesia is of great interest to the general medical public, but of an absorbing interest and of paramount importance to the hospital surgeon, whose duty calls him to make daily use of anæsthetics in operations.

Insensibility has to be induced under the most varying individual conditions of age, health, or disease, for the alleviation or cure of disorders of various regions; and truly it can be said of the hospital surgeon that the observation and study of the normal and abnormal phenomena of anæsthesia, with their advantages and constant danger, are an ever-present accompaniment of his avocation.

Before entering upon the discussion of the merits of the question that is to occupy us, a few words may be appropriate regarding the spirit which unfortunately has characterized many of the deliberations instituted for the sake of elucidating the principles which should govern the physician's choice of anæsthetics.

Instead of the maintenance of the unbiassed and calm tenor of the scientific observer's mind, so indispensable to the arrival at reliable and trustworthy conclusions, we have seen, too often, the zealot's vehemence, the partisan's lack of candor, and the exaggerations of a political controversy enter into the debates had on the merits of the different anæsthetics.

I wish to enter a solemn protest against this unscientific way of conducting an inquiry for the discovery of truth, and this mainly because I am convinced that the truth which we strive to discover cannot be arrived at unless we cast off all prejudice and passion and approach our problem with the spirit of candid inquiry. Pains have been taken to exclude material not gathered within the personal experience of the author, all conclusions arrived at and views taken being based upon personal observation made during an arduous hospital service of eight years.

First of all, let us clearly state that both chloroform and ether are dangerous anæsthetics, as a long array of fatal accidents recorded in medical literature has abundantly shown. The relative amount of danger caused by chloroform or ether anæsthesia is best characterized by the fact elicited in the series of sphygmographic observations made by Kappeler, that chloroform invariably produces a very marked depression of the vaso-motor function, and that this depression occurs only occasionally in ether anæsthesia.

The practical significance of this fact is, that chloroform is the infinitely more powerful agent, and that its administration requires a greater amount of care, caution, and circumspection. But this fact is by no means a sufficient ground for its unqualified condemnation. It is true that the administration of chloroform involves a greater responsibility as long as the patient is kept under its immediate influence; but consciousness being restored, the dangers of chloroform anæsthesia are past, as no secondary deleterious consequences are recorded that could be charged to the use of chloroform.

Ether, on the other hand, has not caused as often immediate death on the operating-table as chloroform; or, put in another way, recklessness in its administration has not been followed as inexorably by disaster as in the use of chloroform; but the dangers of ether anæsthesia are by no means overcome from the moment that the patient has recovered consciousness. Numerous deaths from acute nephritis and catarrhal pneumonia, chargeable to ether anæsthesia, abundantly attest this.

To sum up the proposition, it may be said that, whereas chloroform is undeniably the more powerful anæsthetic, the immediate danger of its administration is greater, but is past as soon as anæsthesia has terminated, no secondary effects following its exhibition.

Ether being the less powerful anæsthetic, its immediate danger during narcosis is less, but is in a great measure compensated by secondary dangerous affections of the lungs and kidneys, occasionally produced by its administration.

The statement made by zealous advocates of ether, that its administration is always, and under all circumstances, safer than that of chloroform, does not coincide with truth, as we shall presently see.

The main object of this paper is to point out, on the one hand, the conditions under which chloroform is the more dangerous anæsthetic and should never be used; and, on the other hand, to show when ether is the more dangerous narcotic, and therefore should not be employed. Both agents are a very valuable part of our pharmacological equipment, and their intelligent employment should be fully understood by every well-educated physician. Such one-sidedness as prevails in some of our Eastern medical centres, where physicians are frequently met with who fear and shun the use of chloroform even where it is clearly indicated; where physicians exist who confessedly do not know how to administer chloroform, *because they never have seen it done;* where the otherwise excellent schools clearly neglect to impart to their scholars by practice the knowledge of administering chloroform—such one-sidedness cannot stand serious criticism, and must lead to the comparatively frequent detriment of those who intrust us with their welfare during an illness requiring anæsthesia.

The false cry that ether anæsthesia is entirely free from danger has led to another grave condition of things observed among the young men who seek and gain hospital positions. Nowhere else did the reader of this paper see an amount of recklessness exhibited in the administration of anæsthetics equal to that in the cities where chloroform is tabooed; especially in cases that take ether badly, and in whom relaxation is not easily accomplished, matters are forced in a way that must excite the gravest apprehensions for the safety of the patient. Usually these are the cases of those addicted to the immoderate consumption of alcohol, persons of enfeebled circulation and impaired respiratory organs.

More and more ether is poured on, until the cyanosed patient relaxes, his stertorous breathing indicating that an ever-increasing mass of viscid mucus and saliva is flooding his trachea and bronchi. The sensitiveness of the larynx and trachea is abolished, and if vomiting occurs, especially where the inexperienced anæsthetizer neglects to conduct the vomited matter out of the mouth, gastric contents find their way into the bronchi, and a catarrhal or even septic pneumonia follows, resulting in death, which, however, is never charged to the account of ether.

It being admitted that, on the whole, ether is the less dangerous anæsthetic, preference should be given to it, especially when anæsthesia has to be conducted by an inexperienced person. Ormsby's inhaler is better than Allis' or its modifications, as less ether is required by its use to induce and maintain full anæsthesia, and recovery is more prompt on this account.

Ether is counter-indicated in all affections impairing the integrity of renal function.—To Emmet belongs the honor of having first pointed out the danger of administering ether in chronic or acute renal disease. An increasing number of recent observations fully corroborates his view taken in this matter. As an illustration the following case may be quoted here:

Case I.—I. M——, aged seventy-three, admitted August 21, 1883, to Mount Sinai Hospital, on account of incarcerated right inguinal hernia of three days' duration. Constant feculent vomiting; good pulse, sixty beats per minute were present. Late at night herniotomy was performed under ether, after an unsuccessful attempt at taxis. The sac being exposed, a knuckle of gut containing an oblong, square body could be felt. This body gave way to moderate pressure of the fingers, after which the gut could easily be replaced into the abdominal cavity without opening the sac. The patient's daughter reported on inquiry that her father had had a large meal of potato-soup before he was taken sick. It was concluded that a square piece of potato, bolted by the toothless old man, had been the cause of the strangulation. The operation had lasted twenty-five minutes. The patient recovered promptly from the anæsthesia, and exhibited no symptoms indicating a disturbance of the wound. August 23d, marked somnolency was noted, with very scanty secretion of urine, which was found to contain much albumen and hyaline casts. The wound was healed August 29th, nothwithstanding the fact that uræmia, with stupor and much vomiting, continued to exist, to which the patient succumbed in a comatose state, September 1st.

There had been no indication of kidney trouble previous to the operation.

Those who wish more convincing proof on this subject are referred to the publications of Emmet, Van Santvoord, Wesley M. Carpenter, Dr. Millard, William F. Norris, and Dr. Turnbull.

That chloroform is a much safer anæsthetic in Bright's disease and allied morbid conditions of the kidneys than ether is abundantly attested by the fact that it has been employed for hours together, without any accident, in uræmic eclampsia of gravidity. A careful examination of the urine should invariably precede every anæsthesia, and the presence of albumen or casts should be considered a positive counter-indication to the use of ether, and a direct indication for the use of chloroform.

Serious objection to the use of ether as an anæsthetic must be raised in another numerous class of cases. *Chronic catarrhal affections of the bronchi of the aged, and, perhaps, of infants, frequently develop into catarrhal pneumonia terminating in death of the usually enfeebled patients in question.* Very little has been said or written on this subject heretofore, and the reader of this paper deems it his duty to draw the attention of the profession to his experience regarding this matter.

The very profuse secretion and inspiration of saliva into the air-passages seems to be the main cause of the pneumonia observed after the inhalation of ether. The cold fumes of the drug seem to blunt the sensibility of the bronchial mucous membrane to such an extent that the entrance and presence of even vomited matter does not excite a sufficient stimulus to vigorous reflex action or coughing, especially at the end of prolonged anæsthesia. Hence, what German authors call "Schluckpneumonie" is comparatively frequent after the use of ether, and frequently terminates fatally in those previously afflicted with chronic lung trouble.

Case I.—M. B——, aged forty-three, admitted to Mount Sinai Hospital, August 20, 1883, with a very tight cancerous stricture of the rectum, complicated with periproctitic abscess. On account of this affection and a chronic bronchitis of a mild type her general condition was rather poor, but not sufficiently so to prevent her from attending to her household duties. Lumbar colotomy was performed, under ether, August 22, 1883, the patient being placed on the operating-table on her right side. August 23d, in the morning, a severe chill and high fever set in, the thermometer indicating 105° F. in the axilla. The wound was examined, but was found pale and normal. The next day, August 24th, pneumonia of the entire right lung was diagnosticated, to which the patient succumbed, August 26th. Post-mortem examination revealed dense infiltration of the entire right lung. The colotomy wound was found healed throughout by adhesion.

Case II.—M. H——, aged sixty, admitted to Mount Sinai Hospital, for castration of a tuberculous testicle, on January 23, 1887. Operation was performed January 24th, under ether. January 26th, at 2 P.M., a severe chill set in, followed by an elevation of the temperature, which reached 106° F. in the rectum at 6 P.M. Dulness on percussion, corresponding to the lower posterior portion of the right lung, was made out. The wound was examined at the same time, and was found in a thoroughly correct condition. The pulse was fluttering and very frequent, respirations were shallow and hurried, the patient comatose. He died the same evening at 9.55. Post-mortem examination, done the following day, showed lobar pneumonia of the lower part of the light lung in the stage of bloody engorgement. Wound throughout adherent; peritoneum normal.

Case III.—S. Y——, aged sixty-one, admitted November 12, 1886, to Mount Sinai Hospital, with far-gone cancer of the rectum, for which inguinal colotomy was performed, November 15th, under ether. November 16th the temperature rose to 103.2° F. November 17th, catarrhal pneumonia of the lower part of the left lung was made out, which gradually traversed the entire left lung, causing a number of febrile exacerbations and a very rapid and alarming deterioration of the general condition. The patient's sufferings were very much aggravated by the involvement of the prostate and neck of the bladder by the cancerous growth, causing frequent and painful micturition, and ultimately cystitis and pyelonephritis, to which the patient succumbed, December 23d. Profuse bronchial secretion of purulent character was observed up to the termination of the case. The inguinal colotomy wound healed by primary adhesion as far as the peritoneal sutures were concerned. The muco-cutaneous suture parted in a considerable portion of its extent on account of sloughing of a circumscribed part of the skin, which was, however, readily detached and gave way to a firm cicatrix.

The house-surgeon of the German Hospital kindly extracted notes of three cases of pneumonia, following the administration of ether, observed during the year 1886 in that institution.

In Case I., a patient twenty-five years of age, fatal pneumonia set in the day following an extirpation of the inguinal glands. Before the operation dulness over the apex of the right lung, due to past pleuro-pneumonia, was noted. The affection reappeared on the same side.

In Case II. perineorrhaphy was performed, under ether, on a woman fifty years of age. Immediately after the operation pneumonia set in, to which the patient succumbed. Post-mortem examination revealed a fatty heart, pulmonary emphysema, and chronic bronchitis in addition to chronic nephritis.

In Case III., a boy, sixteen years of age, severe pneumonia followed an extirpation of inguinal glands under ether. Patient recovered.

Five cases of serious bronchitis were also observed, in 1886, in the same institution, after the use of ether.

Four more cases of pneumonia, following directly after the use of ether as an anæsthetic, are recorded in my notes; but as the operations done in these cases were performed on the trachea, tongue, and lower jaw, and the entrance of blood may have possibly complicated the causation, they will not be urged as a part of the argument.

There is no doubt that as soon as the attention of the profession is duly called to the frequency of pneumonia following the administration of ether as an anæsthetic, more cases of this kind will be forthcoming.

Narcosis by ether in small children suffering from affections of the air-passages was never employed by the reader so far, preference being given to chloroform. On the whole, it may be stated, however, that infants whose lungs were sound were frequently anæsthetized with ether without any unfavorable consequences. They have invariably taken the anæsthetic easily and well, and have recovered promptly from it.

In a third rather numerous class of cases ether anæsthesia has been found impracticable, because unconsciousness could not be induced; or because tolerance was attained, but violent retching, coughing, or general *tonic and clonic convulsive movements of the patient rendered the performance of an operation either totally impossible or very hazardous.*

In some operations, as, for instance, incising a fluctuating abscess, or scraping an old sinus, rigidity or imperfect loss of sensation on the part of the patient may be annoying, but is no absolute bar to the proper performance of the contemplated step. But in herniotomy—in fact, in all operations involving the peritoneum—in the removal of deep-seated tumors from the vicinity of large vessels, in operations usually done in the lithotomy position, as for hemorrhoids and stone in the bladder, not only loss of sensation but absolute relaxation of all voluntary muscles is an indispensable condition to success. It has been positively stated in text-books, and also *viva voce*, that the failure to induce full anæsthesia by ether in six or eight minutes must be charged to either poor ether or to incompetency of the person administering the vapor.

This statement is contrary to the facts, as the experience of the reader and that of every hospital surgeon doing much work with the aid of anæsthesia can abundantly attest.

In spite of careful preparation of the patient, and proper administration of ether by a competent and experienced physician, relaxation could not be produced positively in 11 out of 125 cases observed in the German Hospital during the year 1886. Sensation was either not abolished or where tolerance was reached general rigidity or clonic spasms were so pronounced that operating with any degree of comfort or safety was out of the question. A change of the anæsthetic was generally followed by the desired state of tolerance and relaxation.

For the sake of illustration some of these cases may be quoted:

Case I.—H. M——, sixty-two years of age, February 23, 1886; radical operation, according to Czerny's method, for a very large and irreducible inguinal hernia, at German Hospital, under ether. Spasmodic coughing with cyanosis persisted to such an extent, in spite of a hypodermatic injection of morphia, that the operation had to be suspended. At each paroxysm of coughing the intestines rushed out of the unusually wide abdominal ring with such a force that operating was absolutely impossible. There was a wide adhesion of the prolapsed thick gut to the neck of the hernial sac and complete reposition was impossible until the adhering portion of the gut was dissected up, a delicate part of the operation at best, and entirely unsafe, and even impossible, while the coughing and retching lasted. After renewed unsuccessful attempts with ether, lasting for over ten minutes, this plan was given up in favor of chloroform, which promptly produced the desired condition, under which the operation could be satisfactorily proceeded with and finished.

Case II.—S. K——, aged twenty-six, incision of relapsing perityphlitic stercoral abscess, March 9, 1886, at German Hospital. Ether being administered with Ormsby's apparatus for twenty minutes, neither tolerance nor relaxation was induced; change to chloroform at once produced the desired state, and the operation was done without interruption.

Case III.—J. M——, aged thirty-nine, December 18, 1886, laryngo-fissure, at Mount Sinai Hospital, for the removal of endolaryngeal tumors. Ether was administered and at once produced such alarming spasms of the glottis, with cyanosis and imminent suffocation, that it had to be discontinued; chloroform being given, pleasant and undisturbed anæsthesia was at once produced, and the tumors were removed without serious difficulty.

Case IV.—Mrs. C. K——, aged thirty, scraping and removal of tuberculous lymphatic glands of neck, done at the residence of the patient, February 27, 1887. Ether was freely given by Ormsby's apparatus for a considerable time, but failed to produce either complete loss of consciousness or sensation. The small operation had to be done as well as could be, and under much difficulty, on account of the exaltation and struggling of the patient, lasting for a disproportionate period of time. Chloroform was refrained from, as it had produced dangerous collapse on a former occasion. Local anæsthesia by cocaine would have very likely been the best expedient in this case.

Having reviewed the subject in question, the result arrived at may be summed up in the following propositions:

1. *Ether as an anæsthetic should not be used* in cases of present or even suspected acute or chronic nephritis.

2. On patients suffering from chronic pulmonary affections, especially if they be elderly persons.

3. The change from ether to chloroform is justified and proper where complete relaxation and loss of sensation, indispensable to the performance of an operation, cannot be induced by the former agent, and where local anæsthesia by cocaine or the ether spray is impracticable.

Chloroform in the hands of a well-trained and conscientious anæsthetizer is just as safe as ether. Chloroform and ether may be properly put on a parallel with the extremely sharp razor on the one hand, and the school-boy's jack-knife on the other. Undeniably, infinitely more numerous and dangerous incised wounds would occur if every school-boy were permitted to carry a sharp razor, instead of his comparatively harmless pocket-knife. But physicians entering their profession should not stand on the level of school-boys.

Dr. John M. Farrington, who raised his voice with admirable courage in a recent number of the New York *Medical Journal* in favor of the more general use of chloroform as an anæsthetic, pertinently uses the following metaphor: "Now and then a man gets a piece of beef in his windpipe and dies from suffocation, yet people are not deterred thereby from the use of beef."

The undeniable fact of the greater handiness and more general applicability of chloroform should serve as a sufficient incentive to a more general cultivation of the use of this anæsthetic. Its safe use certainly presupposes a greater amount of vigilance and sound medical knowledge than seems to be required from the average etherizer. But no amount of zealotic vilification on the part of the etheromaniacs can dispose of the fact, that the highly trained profession of the continent of Europe, and of England, with the exception of a small fraction of the French, and a somewhat greater fraction of the English body medical, prefer to this day the use of chloroform.

There is only one *intrinsic* counter-indication to the use of chloroform—that is, a fatty and weak heart—where there are three to the use of ether. They are—fatty or weak heart, kidney and lung trouble.

The *extrinsic* counter-indication, namely, carelessness or incompetency of the anæsthetizer, is, no doubt, in-

finitely graver with chloroform than with ether. But for this there is help to be hoped for.

Insufficiency to induce full and satisfactory anæsthesia is quite frequent with ether; with chloroform it also occurs, though much more rarely.

Persons addicted to a regular, not necessarily an excessive, use of alcohol, very frequently "take ether badly." This phrase, so familiar to frequenters of operating-rooms, may mean several different things. It may mean that the patient does not lose consciousness or does not relax, and if ether is crowded, at once becomes asphyxiated and cyanotic, with irregular breathing and signs of imminent heart-failure. His pupils remain widely dilated throughout. The moment the ether cone is removed and breathing improves, his struggles and contractions are renewed. Thus such patients never attain a normal anæsthesia, but suddenly drop from a turbulent stage of excitement into an alarming condition of extreme narcotic intoxication.

Though the majority of these "bad etherizers" are users of alcohol, such a peculiarity is occasionally exhibited by absolutely temperate persons.

Case V.—L——, book-keeper, aged thirty-four, of teetotal propensities, was admitted to Mount Sinai Hospital as a private patient, to be operated on for external hemorrhoids. The patient was perfectly cool when anæsthesia by ether commenced. As soon as the effects of the anæsthetic became manifest, violent opisthotonos, with alarming spasm of the respiratory muscles and deep cyanosis developed, so as to compel interruption of the narcosis. On repeated attempts exactly the same state of affairs developed, even after a hypodermatic injection of eight minims of morphia solution had been given. Sensation was perfectly abolished, and but for the tetaniform spasm the operation might have been done. A change to chloroform did not improve things much, except that the cyanosis became less marked. Nothing remained to be done but to roll the patient over on his side, and to deligate the hemorrhoids under great obstacles. Much difficulty was experienced in gaining access to the anus between the rigid glutei muscles, and what with the convulsive shakings of the patient and the many stoppages caused by the turbulent narcosis, the performance was neither easy nor pleasant, but the end was finally accomplished. The patient was cured of his complaint. Had he been a very fleshy individual the operation would simply have been a matter of sheer impossibility.

Bright's disease, or pyonephrosis, is no counter-indication to the use of chloroform, as a considerable number of the reader's own experiences can attest, of which the following cases may serve as illustrations:

Case I.—S. O——, tailor, aged fifty-four, suffering from tight, impassable stricture of the membranous portion of the urethra, enlarged prostate, and fetid cystitis with pyelonephritis, was seen, March 23, 1886, by the reader, in consultation with Dr. Schwedler, the family attendant. In view of the fact that the stricture was very dense, the bladder extremely dilated, and the patient's peril very great, and after a number of unsuccessful attempts to enter the bladder *per vias naturales*, chloroform was administered on March 25th, and external urethrotomy was performed. Anæsthesia was very good and uninterrupted, and though the patient had lost a good deal of blood from a number of varicose veins surrounding the membranous part of the urethra, he rallied promptly from the anæsthetic, and made a very satisfactory recovery, as far as the irritability of the bladder was concerned.

In July, while using the waters of Richfield Springs, the patient's nephritic trouble became much aggravated, uræmia developing, to which he succumbed, August 10th.

Case II.—J. T——, wholesale liquor-dealer, aged sixty-two, had been suffering from milky patches of the tongue for fourteen years. Since the summer of 1886 two of the patches had turned into painful ulcers, one of them of the elevated kind, and having resisted all efforts at cure, finally a small particle of the growth was excised for microscopical examination. Epithelioma being diagnosticated, excision of one-half of the tongue was proposed. Examination of urine revealed hyaline casts and varying quantities of albumen. February 10, 1887, chloroform being administered, at Mount Sinai Hospital, the left lingual artery was exposed and cut through between a double catgut ligature. After this a platinum wire was carried, by the aid of Peaslee's needle, from the bottom of the wound through the base of the tongue, just forward of the epiglottis, into the oral cavity, and thence around the base of the tongue, close to the left anterior pillar of the fauces, from where another needle brought it back into the wound through the floor of the mouth. The galvanic current severed the left half of the base of the tongue from its attachments, and the thermo-cautery accomplished its division from the healthy remnant of the organ and from the muscles of the floor of the mouth. The loss of blood was very trifling, and the wound was packed with iodoform gauze. The anæsthesia was unusually good, and the patient made a feverless, prompt, and very satisfactory recovery, being discharged from the hospital, nearly cured, on February 24th, just a fortnight after the operation. The condition of the urine remained uninfluenced by the severe and long operation.

Regarding the frequency of pneumonia subsequent upon the use of chloroform as an anæsthetic, the reader of this paper can make the following statement: During his activity as surgeon to two hospitals for eight years, only two cases of pneumonia occurred in his practice. Both concerned patients on whom difficult and very bloody operations were performed in the oral cavity on account of cancer of the tongue and floor of the mouth. In one case a considerable portion of the lower jaw had to be removed; in the other one, tracheotomy had to be very hastily performed in the course of the operation, on account of imminent suffocation from the entrance of blood into the trachea. Both patients recovered from the pneumonia, but ultimately succumbed to recurrent cancer.

In both of these cases the entrance of blood into the bronchi was the plausible cause of the pneumonia.

Valvular lesions of the heart cannot in themselves be admitted to form a valid counter-indication to chloroform. As long as the compensation of the valvular trouble by muscular hypertrophy is good, and is so attested by the good quality of the pulse, no hesitation whatever need be felt to give chloroform. It can be positively asserted that the reader of this paper has many times given chloroform in cases where valvular trouble was clearly manifest, without ever observing any untoward accident, or even an alarming deviation from the normal standard of good anæsthesia. Especially where kidney trouble is associated with valvular heart disease chloroform is the proper anæsthetic, not ether, provided that efficient compensation by muscular hypertrophy is attested by the good quality of pulse. As soon as muscular decay by fatty degeneration sets in, chloroform should never be used, as it is much more deadly than ether.

A weak heart, from whatever cause, be it fatty degeneration or great anæmia, or from nervous influences, is the only valid objection to the use of chloroform. The administration of ether is also more than usually dangerous in these conditions, but chloroform certainly is infinitely more so.

Where *fatty changes* of the heart-fibre are present, the fluttering, compressible, and irregular quality of the pulse, together with other clinical aspects of the case in question, will readily warn the careful practitioner against the use of chloroform, and will inspire special caution, even in the use of ether.

Deep anæmia, from various causes, offers no difficulty in the way of its diagnosis, and will also be generally heeded.

In some cases of anæmia, ether, if anæsthesia is not

driven too hard, will even act as a stimulant to the heart's action, as can be attested from actual experience. But carried beyond the point of safety it will cause the same collapse that chloroform would produce.

Functional heart-weakness, produced by nervous influences of permanent or mostly passing character, such as *excessive fear or fright, is, in the estimation of the author, one of the most important counter-indications to the use of chloroform.* It is strange how little stress is laid upon this point by most surgical authors and teachers, although cases of death from fear or sudden fright through heart-failure are not rare in medical literature. Nothing seems more plausible than that a grave depression of the heart's action, by sorrow or fear, should be augmented to absolute syncope by an anæsthetic, especially chloroform. And yet no text-book or monograph is known to the reader of this paper that raises a warning against this contingency.

Few are the men whose quality and rate of pulse remain uninfluenced by the often dramatic developments immediately preceding a bloody operation to be done on their own body.

This, as it were, normal oscillation of the energy of the heart's action is not what is here referred to.

What is meant by fright or excessive fear is an unusual degree of nervous depression, often quite disproportionate to the danger or difficulty of the surgical measure to be taken. The extraction of a tooth, the incision of an abscess, or some similar trivial procedure will, on account of its unexpectedness, perhaps, so overwhelm an ill-balanced or morally untrained nature, that disaster is produced by the additional small depression caused by the anæsthetic. And stress is laid by the authors upon the fact that death from the administration of chloroform is especially common during the performance of small operations.

Great pain, great danger, or long suffering are known to inspire great courage, and consequently death from anæsthetics administered for the performance of great operations is very rare.

It is proper to state, however, that the author has observed many cases of unusual fear, characterized by pallor and a small pulse, in which ether or chloroform being given, the pulse became ostensibly fuller and better as anæsthesia progressed, and everything passed off very well.

Yet his confidence in the sedative effect of chloroform, at least, was very rudely shaken by a sad case of death from its administration.

The case was as follows:

T. E. R——, clerk, aged thirty-two, presented himself, February 10th, at my house, with a doubtful tumor of the right submaxillary region that was non-fluctuating, but apparently of an inflammatory character, as moderate fever was present. A probatory puncture was proposed and acquiesced in, but in attempting it the patient was seized by such an uncontrollable fright that he begged to have chloroform administered. This was declined by me, the proposition being made instead to have him admitted to the German Hospital as a private patient, where, under anæsthesia, the exploration, and such necessary steps as incision or extirpation, might be at once taken as the case might require.

February 15th the patient entered the hospital.

February 17th he was taken to the operating-room, when he expressed to Dr. Wackerhagen, then there present, the conviction that he would not leave the room alive. This I heard of after the accident. The swelling had visibly increased since February 10th, and was clearly fluctuating, undoubtedly a glandular abscess. Dr. Bachmann, the house-surgeon, an experienced and conscientious physician of several years' hospital experience, commenced to administer chloroform in the proper manner, the patient taking the anæsthetic willingly, and even eagerly. Hence respiration was somewhat hurried, but deep and regular. When about two drachms of the anæsthetic had been used on Esmarch's open chloroform mask, he suddenly struck out wildly with his arms, became stiff in opisthotonos, his face turned livid and distorted, the pupils were widely dilated, and it was especially noted that the abdominal muscles were as rigid as a board. The pulse, held from the beginning by Dr. Baughmann, a student of the New York Polyclinic, suddenly ceased, and the patient turned lax and was dead. All this happened within the space of a minute, and all efforts at resuscitation employed for forty-five minutes were of no avail. The patient's heart was carefully examined before the operation by myself and the house-surgeon, and no abnormality was detected. His pulse was of a good quality, except immediately before the two attempts at operative interference, when it was weak and rather rapid. The urine was found normal; in short, there was nothing to sound a warning note. Only the value of the symptom of nervous depression was not justly appreciated in this case, a symptom that had so often been found of no material importance.

The chloroform used was unexceptionable, and was administered in the proper way; hence the coroner's jury exonerated the medical men concerned in the affair. The experience gained in this case has led to the practice, on the part of the author, to freely administer stimulants and a small dose of morphia hypodermatically, preceding anæsthesia, in cases where unusual moral depression is noticeable, and never to give chloroform to a patient subject to excessive fear.

It is fair to assume that ether also may produce deadly effects under such a circumstance. The cases in which anæsthesia must be employed in spite of the presence of fatty heart, or kidney or lung trouble, or where two or all of these conditions are observed, offer unusual difficulties and involve an especial degree of risk. But who would hesitate to perform tracheotomy for a foreign body, or herniotomy in strangulation, though the risks of anæsthesia might be ever so formidable?

As a matter of self-protection a careful physical examination should always precede every operation, if feasible, and the prognosis should be unhesitatingly and truthfully stated to the proper persons, in its entire gravity, before the first stroke of the knife is made. In many cases of great urgency, where deliberation is inadmissible, common-sense and firm decision will be the best guide of him whose readiness to help is not "sicklied o'er by the pale cast of thought."

It may be said, then, as a summary of this essay, that both chloroform and ether, properly administered, are invaluable and useful anæsthetics; that each of them has its proper and legitimate sphere and limitations; that the modern physician is in need of both of them; that unqualified condemnation of chloroform in surgical practice is unscientific and unjustified by the facts; that an intelligent and free selection and employment of either chloroform or ether must be vindicated as a right, and is the duty of every conscientious physician; that fatal accidents occurring in spite of the conscientious employment of the safeguards known to be necessary in selecting and administering either anæsthetic are, however lamentable, not incriminating to the medical attendant; that it is the duty of the teachers in surgery to give practical instruction in the selection and administration both of chloroform and ether.

TRICHINOSIS IN ITALY.—Dr. Legge, of the University of Camerino, discovered a case of trichinosis in a subject which he was preparing for an anatomical demonstration. The trichinæ were dead and the capsules were for the most part calcified and misshapen. The man had lived for many years in a neighboring commune, and a commission appointed to investigate the case was unable to discover the source of infection. This is thought to be the first case of trichinosis ever observed in Italy.—*Il Raccoglitore Medico.*

no point was it much over one-fourth of an inch thick, except about the root of the lung. The inner surface of the sac was rough and irregular, and seemed to have no well-defined pyogenic membrane. The bronchi were carefully followed out, but no communication existed between any of them and the abscess. The right upper lobe was partly compressed and partly consolidated, some small patches of pneumonia being seen in its lower border. The left lung could be easily inflated, except at one or two patches of presumably old collapse. The bronchial glands were slightly enlarged, but not cheesy. The capacity of the abscess-sac was found to be about four ounces. The other organs showed nothing of importance—the heart was healthy; the intestines showed evidence of slight catarrhal inflammation; kidneys normal in size, slight cloudy swelling; liver somewhat fatty, not enlarged; spleen normal. No evidence of a suppurative process was found anywhere. The bronchi leading to the lobes of the right lung showed evidence of a slight catarrhal inflammation only. No foreign body was found, nor anything else to act as a local cause of the abscess.

The case, so far as the speaker's observation and reading went, was a very unique one, and the diagnosis made of broncho-pneumonia, followed by effusion into the pleura, seemed fully justified by the symptoms. It was difficult to see how the differential diagnosis between such an abscess and empyema could be made.

Dr. Frank Ferguson mentioned a case of abscess of the right lung, with a smooth limiting membrane, occurring in an adult. There was a granular condition of the pleural surface of the lung over the abscess, but not very extensive adhesion to the chest-wall, and the cavity had communicated with a bronchus which admitted a probe about one-tenth of an inch in diameter. He thought that it was primarily connected with this bronchus. The abscess was in the lower lobe, and in the upper lobe were numerous miliary tubercles.

Dr. Ferguson presented a specimen of

STRICTURE OF THE ŒSOPHAGUS,

occurring in a child two years and two months old, who was admitted into the New York Hospital on February 17, 1887. Her family history was good, and she was perfectly well up to three months prior to her admission, when she swallowed a small quantity of caustic potash.

Since then she had not been able to retain any food, but constantly vomited at every effort to eat or drink. Her appetite was very good; her bowels were constipated. On admission she was found extremly emaciated. Whatever was given her to eat or drink was retained only for a moment and then she passed her finger into her mouth and regurgitated what she had taken.

Auscultation revealed that the fluids and solids taken did not travel the entire length of the œsophagus.

The passage of a bougie was interrupted at about the middle of the tube. The child rejecting everything given her by the mouth, was put on nutritive and stimulating enemata, which she retained when given in small quantity.

During her residence in the hospital her temperature ranged below one hundred, and her condition was such that operation was not regarded as advisable. She died thirty-four hours after admission.

The *autopsy* revealed a stricture of the œsophagus, about its middle, two inches in length, and admitting a probe one-eighth of an inch in diameter. The œsophagus above the stricture was dilated; below it, normal. There was much thickening of the wall of the œsophagus in the neighborhood of the stricture.

The stomach was very anæmic, but otherwise normal. The other organs also were all anæmic, but otherwise normal. The body was greatly emaciated.

The Society then went into executive session.

NEW YORK ACADEMY OF MEDICINE.

SECTION IN OBSTETRICS.

Stated Meeting, March 24, 1887.

E. L. Partridge, M.D., Chairman.

Dr. Hubbard W. Mitchell read a paper entitled

OPERATION FOR STELLATE AND BILATERAL LACERATION OF THE CERVIX UTERI,

in which he spoke of the frequency of the occurrence, of the injury, of its forms, of the difficulty of recognizing it at the time of labor, of the possibility of absence of after-symptoms and of spontaneous healing, of the symptoms to which it may give rise as mentioned by Thomas, of the liability to the occurrence of epithelioma in consequence, described by Emmet, and then proceeded to describe the method of operating which he had practised, after preparatory treatment, consisting of cleansing the parts, scraping away all granular material with the sharp curette, the use of hot-water injections, and applications of solution of nitrate of silver, forty grains to the ounce.

He uses his own speculum, a modification of Sims', which is a Sims blade with two broad, separate wings, bent into such a curve as holds up the upper labium (patient in the Sims position, profoundly anæsthetized) and depresses the lower labium, and gives a wide vaginal opening through which to work. It has one large, movable handle, that can be attached to blades of various sizes. Having located the place where the future os is to be, he cuts away all unsound tissue. The circular artery is almost invariably divided. He uses interrupted silver-wire sutures, five or six to the inch, and threads the wire directly into the eye of the needle. He removes the sutures on the tenth day. Of the 113 cases on which he had operated union by first intention took place in 110. Of the 65 cases of bilateral laceration, pregnancy occurred subsequently in 8, and at the next labors—he attended them all—laceration occurred in only one, and there it was only slight.

Dr. C. C. Lee said that he had been favorably impressed with the paper, which contained an excellent exposition of the present state of knowlege with regard to trachelorrhaphy, but that he should be obliged to differ with its author concerning some of the details of treatment. He thought that the

LOCAL APPLICATION OF NITRATE OF SILVER

did more harm than good; weak solutions of iodine were more beneficial. He had never seen a needle that could be managed so well as the carrying-loop, in using silver-wire sutures. It had not been his experience that the circular artery had been divided in the operation in a greater proportion than one in twenty cases, and when divided he had regarded it as an accident rather than an almost necessary part of the operation.

Dr. Wylie could not agree with the general import of the paper or find very much in it to commend. He believed that to speak of laceration of the cervix as a disease was calculated to do harm and increase the number of operations, judging from the very large number of patients operated upon in so short a time by Dr. Mitchell.

A perfectly healthy, normal cervix is not likely to be lacerated. But if the cervix is imperfectly developed, or has been the seat of disease, it is very liable to be lacerated, and in such cases a slight laceration may cause a great amount of trouble. Simple laceration of the cervix, unless it destroys the sphincteric power of the uterus, does but very little harm, provided there is no disease of the glands or follicles and no sepsis following labor. He believed that Dr. Mitchell had operated in cases which could have been cured, probably, by treating the conditions which were complicated by the laceration of the cervix.

LACERATED CERVIX SHOULD NOT BE SEWED UP

until it gives rise to symptoms, and when it does produce symptoms there is some disease behind it that needs treatment.

Dr. Mundé would never operate on what had been called the stellate laceration, unless there were special symptoms referable to what had been known as the cicatricial plug, and he might not even then. The bifid laceration might require an operation, providing it gives rise to symptoms. He never considers a laceration with regard to operation unless it produces symptoms; its mere existence does not call for sewing it up, no matter how large it may be, or how much everted.

When the cicatricial tissue makes pressure deep into the cellular tissue, and is attended by pain and reflex symptoms, the operation is justifiable. When the eversion is large, the menopause is not far off, and there is free discharge, he would operate, because of the liability to the development of epithelioma. He did not agree with Dr. Chadwick, of Boston, who had recently published that there was no danger of epithelioma developing from lacerated cervix, simply because he had had cases that proved to the contrary, and had no doubt that

THE LACERATED CERVIX IS MORE LIABLE TO BECOME THE SEAT OF MALIGNANT DISEASE,

if the eversion and erosion, etc., are sufficient, than is the cervix that is not in a torn condition.

He regarded it as a mistake when the circular artery was cut. He thought that in about ten per cent. of the cases the operation failed. He also regarded five or six sutures to the inch as more than was necessary. He utterly condemned placing the external os anywhere except where it belonged, and where it could receive insemination.

Dr. A. F. Currier agreed with the conservative remarks of the last two speakers, and had found that he declined more and more to perform the operation. He regarded five or six sutures to the inch as too many, and very liable to interfere with proper circulation.

Dr. Mitchell, in closing the discussion, said that only a few applications of nitrate of silver were required, hence its deleterious effects need not be produced. Where the case demanded an operation, it should be performed without much delay. He thought it was understood by all that the operation should not be performed unless called for by symptoms. He had not been able to give much relief without, in most cases, an operation to restore the contour of the cervix; but by cutting away these follicles and granulating tissue, reaching healthy tissue, and then closing the wound with silver-wire sutures, he had cured his patients.

He was unable to see how Dr. Mundé could cure a case of stellate laceration of the cervix without first cutting away all the torn tissue completely, and converting it into a straight, large, open wound.

TUBAL PREGNANCY.

Dr. Wylie opened the discussion on this subject by briefly narrating three cases. The points which he made were, that it was difficult to make a positive diagnosis; that if made, electricity should be used, but that if it failed he would operate at once; that if he had the placenta to deal with he would, if he could feel sure that he could do so perfectly, tie off the blood supply, and then remove it.

Dr. A. F. Currier, on behalf of Dr. J. E. Janvrin, read the history of a case and exhibited the specimen. Dr. Janvrin would perform laparotomy whenever the first symptoms of internal hemorrhage occurred. The primary rupture—which occurs in the superficial artery without rupture of the sac—which is sure to be repeated, is the cause of the colicky pain-collapse and other grave symptoms, and indicates

THE PROMPT PERFORMANCE OF LAPAROTOMY.

Even before symptoms of rupture develop, he would urge the performance of laparotomy.

Dr. J. West Roosevelt presented a specimen without history other than than it was removed from the body of a woman who died, in Roosevelt Hospital, of syphilitic tumor of the brain. The fœtus was between six and seven months old, and had changed into a condition resembling

ADIPOCERE.

The tumor had been carried for many years, and had not given rise to symptoms.

Dr. P. F. Mundé gave a brief history of three cases of tubal pregnancy; of extra uterine fœtation he had seen six cases. He believes that a positive diagnosis can be made, notwithstanding the stricture placed by

MR. LAWSON TAIT ON DR. COE'S PAPER,

in which he said that it could not be done, and then modified it by saying that he wished to say that he had never seen such a case. He regarded

TYMPANITES AS A GRAVE COMPLICATION

He would not operate at once, but would wait a little in primary rupture, and be governed by the general condition of the patient. He regretted that he did not perform laparotomy in one case.

Dr. J. Lewis Smith exhibited a specimen removed from the body of a woman, whom he saw with Dr. Griswold, and who was suddenly attacked with severe pain in the lower part of the abdomen, but without vomiting, and did not go into

COLLAPSE UNTIL ABOUT SIX HOURS AFTERWARD.

She died sixteen hours after the occurrence of the rupture. Her catamenia had continued throughout her pregnancy.

Dr. Brown, of the Carnegie Laboratory, who made the autopsy and had examined the specimen, reported that there was a large quantity of blood in the peritoneal cavity, but there was *no evidence of peritonitis*. The interesting features of the specimen were the presence of a decidua, the extreme thickening of the walls of the uterus, and the extreme thinness of the walls of the sac at the site of the rupture. As to

THE PRESENCE OF THE CATAMENIA,

Dr. Wylie said that this was a symptom that could not be depended upon, and The Chairman remarked that irregular discharges of blood were commonly present, but it was believed generally that true catamenia were absent.

Dr. R. A. Murray then presented a specimen of

RUPTURE OF THE UTERUS.

It was interesting from the fact that an absolute diagnosis was not made. The woman was twenty years of age, single, and a primipara. There was nothing special concerning her labor except the *absence of all the usual symptoms of rupture*. There were no violent labor pains at any time.

FORCEPS WERE USED,

because the fœtal heart could not be heard. After labor there were no symptoms pointing toward rupture. There was some pain in the abdomen, which became tympanitic, but the lochia were of a bright-red color and absolutely free from odor. However,

THE FACIES OF THE PATIENT INDICATED GREAT DEPRESSION,

and an examination was made, under ether, when it was found that rupture had occurred upon the right side at

what are supposed to be the typical appearances of deposit and degeneration of tubercle have been seen by authentic observers to occur in the larynx at a period when most careful examination failed to discover any such condition of the lungs. These patients, however, developed pulmonary tuberculosis soon after. I presume that it is the general opinion that when the tubercular infiltration was first noticed in the larynx a similar deposit had already taken place in the lungs, although it did not furnish tangible physical signs. Leaving the question of primary laryngeal tuberculosis out of consideration, we come to a far more important part of our subject, and these questions present themselves:

Is laryngeal phthisis always tubercular phthisis? and if so, is the deposit of tubercle always the primary lesion of the larynx? or is the deposit oftentimes secondary to a catarrhal laryngitis of simple character which, aggravated by the bad general condition of the patient, has gone on to the stage of ulceration? And, again, granted that tubercular tissue is deposited in the larynx at an early or later period, is it the cause of the degenerative process that follows? does its presence render the disease called laryngeal phthisis a specific one, that is, totally unlike a simple catarrhal process? or, on the other hand, is not the deposit of tubercle one of the later manifestations of an ordinary chronic catarrhal laryngitis? Heinze, who, as has been said, has been one of the most radical believers in the tubercular origin of phthisical laryngitis, could demonstrate the presence of tubercle microscopically in only one-half his cases. What shall be said of the remaining fifty per cent.? That secondary tubercular deposit in the larynx is a very common sequel to pulmonary phthisis there is little doubt, and I believe that it is equally true that oftentimes this infiltration takes place at a comparatively late period of the disease, the symptoms, cough, hoarseness, aphonia, painful deglutition, etc., being due for a time to an aggravated simple catarrhal laryngitis. That many such larynges show nothing more than the lesions of an ordinary catarrhal process I have demonstrated to my own satisfaction many times.

Two extreme beliefs, then, in regard to the pathology of laryngeal phthisis, are held—the first, and most generally credited one, being that the inflammatory process in the larynx is always due to the deposition of tubercle, and occurring after the same condition has taken place in the lungs. The second opinion, to which a gradually diminishing number still pin their faith, is that tubercle plays but a very inferior part in the etiology of the laryngeal inflammation, and in the small percentage of cases where tubercular infiltration is found it is supposed to have involved the larynx after the stage of ulceration had been reached. Neither of these theories seem to me to be so fully supported by laryngoscopic and clinical investigations as one somewhat between the two. Like most disputed points in medical science, the whole truth is not to be found on either side. That tubercular laryngitis is not an inappropriate name for the disease under consideration is proven by the careful studies made by such men as Virchow, Rokitansky, Heinze, and Mackenzie. They all agree as to the presence of tuberculous tissue, but, as Dr. Alfred L. Loomis says, while "all observers agree as to microscopical *appearance*—in their *interpretation* they differ widely. An etiology of any disease which is built up on post-mortem pathological appearances may not explain all the phases of a disease. The microscope does not supplant the clinical investigator, and so we say that, while tubercular infiltration is known to be present in many cases of laryngeal phthisis, its presence does not imply a disease which runs a typical course or one in which the prognosis is always bad. Medical observers whose opinions have been formed mainly by *laryngoscopical examinations* of these cases still cling to the belief that many cases of laryngeal phthisis are not in any way peculiar in character, but are the result of a simple catarrhal inflammation which has reached the unusual stage of ulceration and degeneration only because the general condition of the patient tends so strongly to the formation of unstable lymphoid tissues, and because there is so little general recuperative power. These men claim, also, that laryngeal phthisis occurs as a complication of Bright's disease, syphilis, scrofula, etc., and is a sequel to *non*-tubercular as well as tubercular phthisis. While we think it would be difficult to prove that phthisis of the larynx ever occurred as the result of the asthenic condition produced by Bright's disease and syphilis, unless these conditions had also led to pulmonary degeneration, we do believe that there are many cases of so-called tubercular phthisis which do not present the characteristic laryngoscopical appearance ascribed to that disease, and which strongly support the opinion that the disease is frequently a simple catarrhal one.

You are all familiar with the appearances of the larynx which are considered pathognomonic, the pale color of the mucous membrane, the thickened turban-shaped epiglottis, the swollen club-shaped arytenoid cartilages, and the inter-arytenoid thickening. This tumefaction of the epiglottis and arytenoids is peculiar. There is nothing like it found in any other variety of laryngitis, and when it is present there would seem to be no question but that this characteristic swelling is due either to the deposition of the so-called tubercular tissue or to the infiltration of a tissue not to be found in simple catarrhal inflammation. Upon these appearances I believe that a positive diagnosis of incipient pulmonary phthisis can be made, even though no evidence of lung-change can be found, and I consider the differential diagnosis of this disease from any other variety of laryngitis based on *these appearances* as extremely simple. I mean, when all these appearances are present, or even when the epiglottis and the arytenoids are both involved in this peculiar swelling, tumefaction of the arytenoids alone, without inter-arytenoid change, does not make the diagnosis certain. There is, however, a class of cases of laryngeal phthisis, and they are not so infrequent, which present none of the characteristic tumefactions of laryngeal phthisis; in fact, they differ not at all in their laryngoscopical appearances, certainly not in their early stage, from the ordinary cases of subacute and chronic catarrhal laryngitis. Nor do they differ in their later and latest stages, unless ulceration may be said to be foreign to simple catarrhs and due only to specific inflammations, for ulceration is the only distinguishing feature.

A word as to the local causes which greatly tend to aggravate a simple catarrh of the larynx and to produce ulcerations where there exists a predisposition to pulmonary phthisis.

It must not be lost sight of that the physiological function of the larynx is a grave predisposing cause to inflammation of the mucous membrane here—a part that is put in motion with every breath, that undergoes friction with every word spoken, and that is constantly exposed, not only to sudden and marked changes in the temperature of the air which comes in contact with it, but also to dirt, dust, and foreign bodies generally—such a portion of the body cannot long retain its integrity when there are added to these irritants the mechanical violence of a harassing cough and the infecting irritation of decomposed tissues which pass over it constantly from the lungs. This condition of affairs alone is, to my mind, sufficient reason for the frequency of phthisical laryngitis, and explains the tendency to ulceration in this disease. To prove that the function of the larynx is not a theoretical predisposing cause of inflammation, let me state this significant fact, viz., that, by reason of the greater stress upon the vocal organs and the greater exposure to rough weather, phthisical laryngitis occurs about twice as frequently in males as in females, whereas pulmonary phthisis occurs about equally in the sexes; and just here there is a valuable suggestion as to the treatment of this disease, viz., to obtain complete rest for the larynx by not using the voice.

Those who have made much study of inflammatory conditions of the upper respiratory tract know to-day, as they did not know three years ago, the very intimate relation which exists between nasal and post-nasal catarrhs and inflammation of the larynx and the lungs. If you would cure a laryngitis, you must first cure the nasal disease which has occasioned it; and it is not too much to predict that pulmonary and laryngeal phthisis will become less and less frequent as obstructive nasal diseases are more successfully treated.

Tubercular laryngitis is an unfortunate name for a disease which is not always tuberculous, because the majority of medical men think that tuberculosis is as little amenable to treatment as carcinoma. And for that reason it is highly important to classify the cases of laryngeal phthisis according to the process which can, by laryngoscopical examination, be seen to be present. To formulate my belief more concisely, I would say that I believe that laryngeal phthisis is not always laryngeal tuberculosis. That in about sixty-five per cent. of the cases we find the characteristic tumefaction due to the deposition of tubercle, but in the remaining thirty-five per cent. the process is slow and insidious, commencing with an ordinary subacute catarrh, which becomes chronic and finally ulcerative when the condition of the patient has become impaired. The prognosis will depend upon the stage at which the disease is recognized and treated.

I most earnestly bespeak for these cases the benefits to be derived from local treatment—topical applications. Time and time again, when these cases have presented themselves early, I have seen the hacking cough checked as soon as the subacute laryngitis was relieved; and so, for the time at least, any progress of the laryngeal phthisis was prevented. I have seen many cases where the arytenoids presented the typical club-shape swellings improve rapidly under local treatment, and a number have been cured when the stage of ulceration had been reached. In these cases the larynx, perhaps, more than the lungs is the seat of the cough-producing irritant, and when the cough is checked one very depressing factor is removed. And if by local treatment—and it is the only reasonable way of controlling this distressing symptom, painful deglutition—this can be relieved, there is some hope of strengthening the patient by proper nourishment. I know that busy practitioners throughout the country have little time to devote to the study of laryngology, but it is the duty of every man who treats laryngeal phthisis to become sufficiently skilful with the laryngoscope to be able to detect the early evidences of this disease, and to carry the laryngeal applicator or direct atomized fluids or medicated powders into the larynx. A laryngeal mirror, an applicator, or a hand-bulb atomizer, or a powder-blower, with some simple illuminating apparatus, is the necessary equipment.

Be suspicious of any long-continued hacking cough—such a case should have the benefit of a laryngoscopic examination at once; and if a very pale larynx is seen, or if there is inter-arytenoid thickening, the lung will soon show evidences of disease unless the larynx is treated and the proper attention paid to the general health of the patient. The larynx frequently gives unmistakable signs of approaching pulmonary phthisis months before the lungs show any evidences of it.

I shall not attempt to enumerate all the different local remedies that have been employed in laryngeal phthisis, but will mention a few which are easy of application, and upon which I have placed most dependence. Dr. F. H. Bosworth, in his excellent article on laryngeal phthisis, covers the important points of successful treatment: First, by insisting that the parts be thoroughly cleansed with a mild alkaline and disinfecting spray before the medication is applied; and second, that some anodyne be employed before or incorporated with the astringent or alterative to be used, so that whatever benefit may be derived from the medicament may not be lost by paroxysms of coughing and vomiting. It will answer the purpose as well, and save trouble, if hydrochlorate of cocaine be added to the preparatory cleansing spray, and I have used this formula with success:

℞. Sodii bicarbonatis,
Sodii biboratis ..... āā grs. v.
Cocaine hydrochloratis ..... grs. vii.
Listerine,
Glycerinæ..... āā ʒ j.
Aquæ destil..... ad ℥ j.

M. Sig.—Spray into the larynx five minutes before making the principal application to the throat.

This should be sprayed into the larynx with a hand-bulb spray, and also above into the post-nasal space. The laryngoscope is not needed for this. The cocaine may be omitted, using the above formula only for cleansing purposes, and it may be followed by a solution containing five grains each of sulphate of morphia and bicarbonate of soda to the ounce of water. Eight minutes later, when the cocaine or morphia has produced local anæsthesia, the principal application can be made. I agree with those men who believe that iodoform has a specific effect in laryngeal phthisis. Better results can be obtained with it than with silver, copper, zinc, or any of the astringents. I am in the habit of applying iodoform in solution in ether with a soft wad of absorbent cotton wound about a small applicator. It is not more irritating than the powder, and the rapid evaporation of the ether gratefully cools the inflamed larynx. The application is to be made very gently. If the physician cannot use the laryngeal applicator he may, with a powder-blower, employ the following:

℞. Acidi tannici,
Acidi boracis..... āā ʒ j.
Iodoformis..... ʒ vj.

M. Sig.—Blow a small quantity into the larynx with powder-blower.

Rest to the larynx—obtained by not speaking above a whisper—wearing a respirator in cold or dusty weather are important points. Spraying a two per cent. solution of cocaine or one-eighth of a grain of morphine into the larynx just before the patient eats affords great relief. Tracheotomy as a means of securing rest to the larynx I do not think deserves serious consideration. It is frequently desirable, when deglutition is painful on account of ulcerations of the larynx, to obtain rest for the parts by feeding with, not the stomach-pipe, but the œsophageal tube.

In conclusion, I would say that I believe that the early cough in pulmonary phthisis is due quite as much to laryngeal as to pulmonary irritation. I believe, too, that the laryngeal catarrh hastens the degenerative process in the lungs. I also believe that appropriate local treatment to the larynx will often cure laryngeal phthisis in its early stages and afford much relief after ulceration has taken place.

ALMÉN'S TEST FOR SUGAR IN THE URINE.—Dr. K. A. Norderling, of Rockford, Ill., in referring to the defects of Trommer's test for saccharine urine, sends the formula proposed by Professor Almén, of Upsala, which, he says, possesses many advantages. It is reliable, and will keep unchanged for years. The following is the formula:

℞. Caustic soda, Gm. 8 (ʒ ij.) in water..Gm. 100 (℥ iij.)
Potassio-sodium tartrate.....Gm. 4 (ʒ iv.)
Bismuth subnitrate.....Gm. 2 (ʒ ss)

The urine is first to be tested by heat and nitric acid for albumen, and, if any is present, it is to be separated by filtration. In testing for sugar, one part of the solution is used to ten parts of urine. By means of this bismuth solution, Dr. Norderling affirms, sugar may be detected when present in the proportion of only .05 per cent. The preparation of the solution should be intrusted only to a competent chemist.

TWO CASES OF INSUFFICIENCY OF THE SUPERIOR RECTUS MUSCLE, WITH DISTRESSING SYMPTOMS PERMANENTLY RELIEVED BY PRISMS.

By R. W. AMIDON, A.M., M.D.,

NEW YORK.]

It is with extreme diffidence that I present these two cases, as they were not studied with the care their rarity deserved, or with that mathematical precision the science of ophthalmology is capable of. Both patients came to me in the course of neurological practice for the relief of nervous symptoms. In both, on being submitted to a routine examination, these symptoms were found to be of ocular origin. And if the examination of the cases now seems faulty and its record lacking in detail, let the apology be that the examination sufficed to locate the mischief, and what is still more important, particularly to the patient, to remedy it.

Case I.—A gentleman aged sixty-two first consulted me, January 5, 1880. He was an officer in a bank and had for years done much near work with his eyes. Naturally, or by occupation, he was of a rather weak muscular and irritable nervous constitution. His digestive power was feeble, often failing almost entirely. His chief trouble had been, for years, frequently recurring attacks of headache starting from the left occiput, running forward over the head to the left brow, and often going across the forehead to the right brow. These attacks usually terminated in profound nausea, vomiting, and extreme prostration, and were generally followed by a sick spell characterized by aggravated indigestion and flatulent dyspepsia. He always was below par and had abused his eyes before attacks came on.

His vision was $\frac{6}{10}$ with each and both eyes; with a +.50 D. it was $\frac{6}{6}$. He had insufficiency of the interni, 4° for distant and 7° for near vision. His accommodation had practically disappeared. His fundus oculi was normal.

An examination two days later showed the same state of affairs, and he was ordered, in addition to the +3 D. which he was then wearing, a prism of 2.5° base in over each eye.

Because of a nervous feeling which spectacle-frames gave him he was reluctantly allowed to wear eye-glasses. He was made very comfortable for almost six years with these glasses or similar ones, the spherical remaining the same and the prisms varying in strength according to the amount of insufficiency, which was constantly present, but variable in degree. During this time the insufficiency of the interni for distant vision varied from 2° to 5°, the average of thirteen observations being 3¼°, while for near vision it varied from 5° to 16°, the average of fourteen observations being 8½°. During this period he complained to me of but few *bad* headaches, his general health occasionally calling for a short course of bitter tonics with iron or an alkali.

In December, 1885, having presumably the same insufficiency I never saw him without, he consulted, without my knowledge, an oculist who told him that only cutting the muscles could relieve him, and who ordered for him +75 S. and a prism of 1½° base out over each eye for constant use for the distance. He wore them a few hours, but they gave him a violent sick headache. When he was able to go out again he consulted me again and I found, December 17, 1885, that he had an insufficiency of the interni for the distance of 2°, for near vision of 6°, and I ordered him +3 S. and a prism of 2° base in over each eye. These rendered good service until July 13, 1886, when, on his return from Europe in poor health, he called, saying his eyes troubled him a good deal and he wanted to try spectacles. At this time his insufficiency was 3° far and 5° near, and as his presbyopia had increased I ordered him +3.50 S. and a prism 2° base in over each eye, also a tonic of nux vomica, quassia, and quinine. He remained well up to December, 1886, when he consulted another oculist, who said he did not need prisms, and ordered him +1 S. for distance and +3.50 for reading. He found he could get along with the distance glasses, but with the others he could not see at all. He came back to me, December 28th, just recovering from a violent left hemicrania and bad gastric attack brought on by the use of the simple spherical glasses. He was very much run down. The insufficiency of his interni was for distance 2°, for near 6°. No insufficiency of the interni for the distance showed itself without a deflecting prism, but with a red glass over the left eye the red image appeared above and to the right of the white at an angle of 45°, and not more than two inches distant. This false image was made to coalesce with the true image by the use of a prism of 2° base up and in over the left eye, or the same prism base down and in over the right. This result was repeatedly obtained, but at the end of the examination it was found that this vertical diplopia had disappeared.

I ordered him to cover the left eye during work, take a capsule containing extract of nux vomica .02, extract of quassia .10, quinine .12, and reduced iron .15 before each meal, and report in a week.

January 4, 1887, his insufficiency for distance was 4°, for near was 6°. The vertical diplopia was again detected by the use of the red glass. It was corrected by the use of a prism of 2°, placed at an angle of 145° base in over the left eye, or the same prism at an angle of 145° base in over the right eye.

When the insufficiency of his interni was corrected a prism of 2° base up over the left eye or base down over the right eye, corrected his vertical displacement completely. As he referred most of his trouble to his left eye I ordered him spectacles +3.50 S. over each eye with a prism of 3° base in over the right eye, and a prism of 2° base up over the left eye. Twice since then I have seen him and he expressed perfect satisfaction with the glasses. In this case all ocular movements to gross tests were normal except near convergence. He had no ptosis nor squint, nor did he hold his head back. The tests were made in the horizontal visual plane and the patient spoke of no obliquity of the false image.

The ultimate result will be, I expect, a cure of the insufficiency of the superior rectus as occurred in my second case. It may be interesting to know that a brother of this patient, two years younger, consulted me recently, and I found he had compound myopic astigmatism in one eye, compound hyperopic astigmatism in the other, and presbyopia of both.

Case II.—The patient was a physician, thirty-five years old. He was in poor general health, hard-worked, and had suffered losses in his family. He had begun the use of convex glasses years ago. For many years his eyes had troubled him, and he had attacks of vertigo which caused him to stagger and necessitated the constant use of a stout cane.

February 17, 1880, he had a severe attack of vertigo, with projection forward. He fell on the street. After this attack he felt very weak. Has had some frontal and bitemporal headache after using eyes. For a short time before coming to me he had diplopia, with elevation of one of the images.

He consulted me, giving the foregoing history, February 21, 1880. An ophthalmoscopic examination revealed nothing except slight hypermetropia and astigmatism. His range of accommodation was normal. There was slight insufficiency of the interni to the prism test, and the vision was made normally acute by the use of weak convex cylindrics, axis 90°. These were ordered for him and helped him somewhat, but he suffered occasionally from vertigo and still noticed the vertical diplopia.

March 4, he consulted me complaining still of the vertigo and diplopia.

The insufficiency of his interni for the distance was 2°;

for near vision 4°; while it was found that the vertical diplopia was relieved by a prism of — 2° base up over the left eye, or the same prism base down over the right eye. Upon subsequent examination it was found that by tilting the prism of 4° base in, which corrected the insufficiency of his interni to an angle of 160°, over either eye it corrected the insufficiency of his superior rectus as well as a prism placed vertically. Such being the case I ordered him + 1.25 cyl., axis 90°, with a prism of 4°, angle 160°, base in over the right eye, and + 1 cyl., axis 90°, over the left eye.

For three years he wore these glasses continuously, suffering from no vertigo or diplopia, and entirely discarding the use of a cane, which before had been indispensable to his security in walking.

He called to see me, February 8, 1883, having worn out the frames of his glasses. On examination I then found that his vision was, R. eye, $\frac{6}{15}$ w + 1.25 cyl., ax. 90° = $\frac{6}{6}$. L. eye, $\frac{6}{12}$ w + 1.25 cyl., ax. 90° = $\frac{6}{6}$. He had an insufficiency of the interni of 2° for near vision, of 4° for distant vision. The insufficiency of the superior rectus had disappeared. I simply prescribed for his astigmatism eye-glasses which continued to give him satisfaction for over two years, when he died of phthisis while South.

A younger brother of this patient consulted me in 1882, and I found him the victim of compound myopic astigmatism and insufficiency of the externi.

Two cases very similar to mine are reported by W. A. Bailey, M.D., in the "Transactions of the Ophthalmological Society of the United Kingdom for 1883," p. 288, and 1881, p. 188.

THE EPILEPTIC COLONY AT BIELEFELD.

By FREDERICK PETERSON, M.D.,

LATE ASSISTANT PHYSICIAN HUDSON RIVER STATE HOSPITAL, POUGHKEEPSIE, N. Y.

A SHORT time ago I visited the "Bethel" Epileptic Colony, at Bielefeld, in the province of Westphalia, Germany. It is now nearly twenty years since Pastor von Bodelschwingh, a Lutheran clergyman, purchased a farm-house, and with four epileptics established here a colony which, for nobility of conception and successful results, has nowhere an equal. From this small beginning there has been a gradual growth until to-day there are over eight hundred and twenty-five epileptic patients, and more than sixty houses upon the farm. The founder had long considered the unhappy lot of these unfortunates, who are usually burdens to their families, against whom the public schools are closed, whom none will employ in shops or apprentice to trades, and who are often necessarily deprived of social intercourse with their fellows by the nature of their malady, or find an asylum only in institutions for idiots or insane. It seemed to him feasible to create a refuge where these sufferers might be cured if curable, might have a home if recovery were impossible, might learn trades, and the great majority become educated, useful, and industrious citizens. Visitors are deeply impressed with the happiness, contentment, and prosperity everywhere apparent among the inhabitants of this little epileptic world. No longer an experiment, it answers the previously unanswerable objections to such aggregations. Since its foundation more than two thousand patients have been treated here, more than one hundred and fifty cured, and more than four hundred and fifty discharged improved.

The employments in this institution are numerous and varied. Work not only ameliorates the mental and physical condition of epileptics, but the incurably afflicted are provided with occupations which they are not permitted elsewhere to follow.

A school furnishes instruction to some one hundred and fifty pupils of both sexes. All branches are taught.

The dairy and the farm and garden require the attention of the greatest number of patients, especially as a large trade in vegetable and flower seeds is carried on by the colony.

Among the shops for epileptic workmen are those for carpenters, cabinet-makers, painters and varnishers, printers, bookbinders, blacksmiths and foundrymen, tailors, and shoemakers, and among the stores are a grocery, a pharmacy, a seed-, and a book-store. The carpenters aid in the building and furnishing of new houses. Books are printed and bound and sold here, especially popular works for religious and moral instruction (the colony being under the patronage of the Lutheran Church). Plans and drawings for new buildings are made in the architects' room. Chromos and photographs of a religious or patriotic character are dealt in. The illumination of mottoes for hospital wards and school-rooms, and the coloring of picture-cards are features of the work performed.

Washing, cooking, knitting, sewing, and fancy work employ many.

From the drug department over twenty thousand ounces of bromide of potash are annually distributed free of charge to epileptics anywhere in the world who are unable to pay for the drug, and who apply here for it; while four times that quantity is sent out yearly in twenty-gramme powders to any who pay the wholesale cost-price. Lately a bureau has been added for the collection and sale of museum objects, such as antiquities, articles of ethnographic or historical interest, autographs of distinguished people, coins, stamps, bronzes, gems, engravings, etc., and specimens from the Animal, Vegetable, and Mineral Kingdoms. From this brief outline it will be seen how every effort is made to multiply and vary the pursuits according to the tastes of the colonists. For men alone there are now nearly thirty different callings.

Every shop and school has a mattress or bed conveniently at hand in case of emergency. Several physicians of the town of Bielefeld visit the institution and oversee the medical treatment.

The whole establishment is, of course, on the cottage plan. The houses exhibit great diversity of architecture and position, and are well separated, with large gardens around them, as are the houses in some country villages.

Not the least interesting feature of the colony, which I can but mention in this place, is the training-school for nurses, which has existed many years. Here healthy, well-educated men and women, usually of the higher German classes, who are inclined to devote themselves to eleemosynary work from religious motives, are trained in general nursing and especially in the care of the insane. Several German asylums are wholly supplied with brothers and deaconesses from this institution to care for their patients. Five years is the time allotted to training.

The entire establishment, with its corps of instructors in schools and industrial pursuits, its nurses in training, its epileptics, and its officers, numbers some fifteen hundred inhabitants. It is growing constantly, with an increase that cannot be checked. Patients come from many parts of Europe and from different States in this country.

The result of years of experience with a large number of cases has led to the adoption of the following general plan

Employment for mind and body.—This is paramount. Out-door work is best.

Diet restrictions.—Food must be plain, not rich, and little-acid. Spirituous liquors are to be avoided. Coffee and tea must be weak and mixed with much milk. (Smoking allowed in moderation.) A good milk-diet is preferable to meats or soups. Supper should be early and light.

Baths.—Cold shower-baths gradually prolonged and cold sponge-baths are beneficial.

Drugs.—The most effectual remedy is the bromide of potassium. It has more value than any other bromide.

It can be taken for years without deranging the stomach. It cures some cases, it lessens the frequency of seizures in others, it soothes the nerves, it often prevents imbecility, it sometimes tends to strengthen the mental faculties, especially the memory. The prescription is as follows:

℞. Potassii bromidi.. 20 grammes (℥ v.).
Aquæ puræ..... 200 " (℥ vj.).

Sig.—Take one tablespoonful three times daily, half an hour before each meal for the first week; four times daily at equal intervals (always some time before or after meals) the second week; five times daily the third week; and so on until eight tablespoonfuls are taken daily, which limit should not be exceeded.

Drowsiness, heaviness, wide-spread skin-eruptions, etc., indicate the necessity of decreasing the dose for a time.

The above dosage is for patients over sixteen years of age From ten to sixteen years, begin with three tablespoonfuls, but do not exceed five or six. Under ten years, begin with two daily and increase to four or five. Very young children should be given still less.

The drug as generally sold contains five to six per cent. of chlorate of potash and other foreign ingredients. An effort should be made to procure a purer drug than this. For this colony a bromide of potash is specially prepared which contains but 0.5 to 0.7 per cent. of foreign matter. The agent should be continued in gradually diminishing doses after the cessation of the disease, even for as long a period as eight or nine months.

Circulars in German and English, embodying the above method of treatment, are sent the world over to epileptics.

There is one small building in this colony set aside for cases periodically or mildly insane; but the worst cases of epileptic insanity are sent to lunatic asylums.

Other colonies upon this model have recently been founded in several Prussian provinces, in Saxony, in Würtemberg, in Switzerland, and in Holland.

The creative genius of this place, the Pastor von Bodelschwingh, whose large philanthropy has alleviated the condition of over two thousand wretched sufferers here, and many more in the outside world, without regard to religious sect or country, expressed to me the hope that the people of the United States or their legislatures would soon seek in some similar or better manner to mitigate the misfortunes of their one hundred thousand or more epileptics.

New York has probably twelve thousand epileptics.[1] Over one hundred and fifty are annually *admitted* into her lunatic asylums—not to count those already there for years—most of whom should and could be better treated elsewhere.

Why should New York not take the lead?

THE EXPENSE OF QUACKERY.—There are in San Francisco, says the *Pacific Record*, one hundred and twenty-five illegal practitioners—*i.e.*, those whose ignorance is so appalling that they could not obtain a license from any of the examining boards. In the State there are over five hundred of this class. Some of them spend large sums monthly for advertising. We know of one whose advertising bills are two thousand dollars a month. Two practitioners on Kearny Street spend each one thousand dollars a month, and one on Market, two thousand. This last declares that his receipts from his practice and sales of nostrums will average *one hundred dollars a day*. The amount (average) filched from their dupes by each of these swindlers cannot be less than two hundred dollars a month, or one hundred thousand dollars in the aggregate. This is $1,200,000 a year.

[1] At the generally accepted rate of two epileptics per thousand inhabitants.

ERYSIPELAS OF THE UPPER AIR-PASSAGES WITH CASE.

BY D. BRYSON DELAVAN, M.D.,
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SINCE the remarkable and exhaustive thesis of Cornil which appeared in the *Archives Générales de Médecine* in 1862, little new information has been advanced upon the subject of erysipelas of the upper air-passages. An excellent *résumé* of it has been given by Morell Mackenzie in his book upon diseases of the nose and throat. In this he states that he has seen but four cases.

Pathologically erysipelas of the upper air-passages is similar to the same malady when situated upon the external surface of the body. It may occur either primarily or by extension from the face along the mucous tracts of the mouth, nose, or ear. Its causes are the same as those which give rise to it when situated upon the surface, although it has been observed most often in the course of general epidemics of the disease. Of eighteen cases recorded, in which the pharynx was affected, fifteen were under the age of thirty, and two-thirds were females.

Cornil makes three divisions of the malady, viz.: (1) Erysipelas with simple redness; (2) erysipelas with phlegmonous tenulæ; (3) erysipelas terminating in gangrene. The disease most commonly reaches the larynx from the pharynx, and it may extend still farther down the respiratory tract and involve the trachea and bronchi.

As to the prognosis, the dictum of Hippocrates, namely, "When erysipelas extends from within outward, it is a favorable symptom, but when it removes to the internal surfaces, it is a deadly one," has been confirmed by modern observation. In nine cases analyzed by Cornil, where the face was first attacked, seven deaths occurred; where in nine other instances, in which the enanthem preceded the skin eruption, seven recoveries took place.

From what has been already said it will appear that the disease under consideration is rare. In this country cases have been reported by Drs. De Blois, of Boston, Porter, of St. Louis, and Roe, of Rochester, as well as by the writer, who, at the meeting of the American Laryngological Association, held June 24, 1885, read an article upon this subject, in which the records of two original cases were given.[1]

From the fact that erysipelas of the throat is probably more common than would be supposed from the small number of cases recorded, and because of the serious dangers which it may occasion, it has seemed well to call attention to the following case, the symptoms of which were exceedingly well marked and severe, and in which although extension of the inflammation from without inward took place, recovery resulted.

G. T——, Scotland, aged forty-seven, stonecutter, married. Family history and previous record good. Fourteen years ago had an attack of facial erysipelas. Present attack began upon February 3, 1887. The inflammation appeared first upon the cheeks but quickly extended to the external surface of the nose, which became enormously swollen. Thence in the next four days it made its way over the forehead, scalp, and ears. Meanwhile the general symptoms were severe; pyrexia, anorexia, prostration, constipation. About February 10 the attack upon the surface of the head having begun to abate, the patient was attacked with pain in the pharynx and dysphagia, whereupon the inflammation extended to the nasal cavities, the upper pharynx, the faucial region, the larynx, the mouth, and the adjacent glands. This was attended with a return of the general symptoms in greater severity than before. There was also mild delirium and decided mental hebetude.

February 26th.—An abscess of the pharynx was incised and about one ounce and a half of dark bloody serum evacuated. The patient reported at the Demilt Dispensary, and was then seen by the writer.

[1] New York Medical Journal, September 12, 1885.

February 28th.—At this time the disease was at its eight; the general condition was one of great prostra- ion. There was the appearance over the face and scalp f a recently resolved attack of erysipelas. Great ema- iation; mental condition dull; pulse feeble. Examina- ion of the upper air-passages showed intense congestion f the nasal, pharyngeal, faucial, and laryngeal regions, hich were filled with an abundant muco-purulent secre- n. There was tumefaction at both sides of the pharynx hind the tonsils, particularly well marked on the right, here, he stated, the abscess had existed, pronounced dema of the epiglottis, the arytenoids, and the ary-epi- ottic folds, slight dyspnœa, and intense dysphagia.

Had been taking little nourishment and no medicine cept quinine for several days.

Treatment.—The nose and pharynx were sprayed with alkaline and antiseptic solution and all secretion re- oved. Especial care was taken to cleanse the nasal ssages and pharynx by means of the anterior nasal ay. The result was immediate and marked relief. e early acute stage having passed and no advantage ng likely to accrue from the use of ice, there were or- ed inhalations of benzoated steam, once every half ur; a spray of a solution of chloride of zinc, three ins to the ounce, every hour; tincture of the chloride iron, fifteen drops every two hours; sulphate of qui- e, two grains every six hours; and abundant nourish- nt in the shape of milk, beef-tea, oatmeal-gruel, raw sters, and raw eggs.

March 2d.—Patient's condition had greatly improved. s able to swallow easily, and was almost free from n. Local condition better; mental dulness less ap- ent; treatment continued.

March 4th.—Still improving. General condition infi- ely better. Local treatment decreased in frequency of plication.

March 7th.—Local condition excellent; gaining rap- y in flesh and strength. Mind clear and vigorous.

Complete recovery in about ten days, during which e the case presented nothing worthy of record.

East Thirty-Third Street.

Clinical Department.

OCAL TREATMENT OF DIPHTHERIA BY THE BICHLORIDE OF MERCURY.

. E. L. Oatman, of Nyack, writes that for the past o years he has treated diphtheria by the local use a solution of the mercuric bichloride, and has been eatly pleased with the results obtained. "Iron in ge doses and free stimulation certainly play an im- tant part in the treatment; but with these alone I —at St. Agatha's Asylum—ten out of twenty-three es, while since the addition of local treatment by the rcuric solution, I have lost but one out of thirty-four equent cases. This patient died two weeks after the sidence of all the local symptoms, from paralysis of muscles of respiration. Seven of my cases have had re or less paralysis of the muscles of deglutition dur- convalesence. This appears to be a large percentage might direct some suspicion toward the mercury as g in a measure causative. The details of treatment an ordinary case, and as followed in the hospital ward, s follows: I manufacture on the spot about fifty swabs made by twisting absorbent cotton around a stick ut the size of a lead-pencil. The cotton should be led out and twisted firmly around the tip of the stick, tending beyond it, that the end may be thoroughly tected, so that no injury be done while using it. This pped in a solution of the bichloride of mercury, two ins to one pint of water, and is passed into the throat ll it touches the posterior wall of the pharynx. It is n instantly withdrawn and burnt. No swab should ever be used a second time. No attempts are made to rub off any of the membrane, but more or less always adheres to the swab. This procedure is repeated hourly, day and night, until the disease begins to subside—which it usually does in forty-eight hours. I follow every application by the internal administration of five to ten minims of tincture of the chloride of iron, and as much whiskey and milk as the case appears to demand. If the interior or posterior nares are invaded, the nose should be syringed. The conical urethral syringe is the safest instrument to leave in the hands of a non-professional nurse. It is of the first importance that the nurse or mother be fully instructed in the method of treatment, and should make the application satisfactorily to the physician before being left in charge of the patient. In no case have I ever experienced any difficulty in getting my instructions carried out, or met with any serious resistance from the patient. Spraying the throat is a far more difficult procedure for the lay attendant, as the tongue obstructs the passage, while none of the loose membrane and mucus is removed as with the swab, but is swallowed and systemic infection furthered. The diphtheritic membrane cannot flourish in contact with the bichloride of mercury, and if this invaluable agent be constantly applied to the diseased surface for a few hours, the poison will be destroyed. I attach great importance to the method of application, and the extraction of the loosened membrane, beneath which the poison is still active, but inaccessible to the antiseptic.

HOW SHOULD SANTONIN BE PRESCRIBED TO OBTAIN ITS FULL PHYSIOLOGICAL EFFECT?

Dr. K. A. Norderling, of Rockford, Ill., communicates the following: "After the introduction of santonin into the system, the urine will in a short time become of a cherry-red color. Santonin will give the same color when dissolved in an alkaline solution, or when heated to liquefaction with the addition of caustic potash. The drug, therefore, undergoes in the system a change similar to that produced by alkalies and heat. Santonin is insoluble in water and dilute acids, but dissolves in the saliva, the gastric, intestinal, and pancreatic juices. This solution in the gastric juice takes place so rapidly that the maximum dose is completely absorbed in the stomach, as has been shown experimentally by Lewin. But it has also been proved by experiment that santonin, when given in an oily solution, is not at all absorbed in the stomach, but the entire quantity passes into the intestine. It is evident that when the drug is given in powder it will be absorbed and taken up in the circulation before reaching the intestine, and consequently, in order to obtain its vermicidal effect, it must be administered in such a form that it will not be acted upon by the gastric juice. Küchenmeister has shown that the drug must be in solution, as he found that ascarides were not affected by santonin-crystals floating in water, but were killed when brought in contact with an oily solution of the drug. In order, therefore, to accomplish its therapeutic object, it is necessary that santonin be in a form in which its vermicidal action can be exerted, and also that it reach the habitat of the parasite. To make the solution, any form of oil may be used, and the best effect is obtained by three grains of santonin dissolved in two ounces of oil, to be taken in four doses. It is also a good practice to add one drop of wormseed-oil to each dose, as researches have shown that all ethereal oils are poisonous to the lower organisms. If a movement of the bowels is desired, castor-oil will be suitable, although not in too large a dose, because with strong peristalsis the santonin does not remain long enough in the intestine to produce the desired effect. About two drachms of the oil to each dose will be sufficient."

THE MEDICAL RECORD:

A Weekly Journal of Medicine and Surgery.

GEORGE F. SHRADY, A.M., M.D., EDITOR.

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A NEW METHOD OF INTRAPULMONARY INJECTION IN THE TREATMENT OF PHTHISIS.

IT is very interesting to note the efforts that are being made in all parts of the world to discover some mode of treatment for pulmonary phthisis by which the disease may be controlled. They are all, of course, based upon the new views of the etiology of the affection which have gained credence in recent times since the discovery by Koch of the tubercle bacillus. Of these different methods we propose to speak more at length at some future time, but now we will refer only to the latest one of which mention has been made in the current literature.

In a communication made to the Medico-Chirurgical Society of Pavia (*Gassetta degli Ospitali*, March 23, 1887), Professor A. Riva gave an account of some experiments made by him with a modified form of intrapulmonary injections. He was not satisfied with injecting a few drops of some substance inimical to the bacilli, but endeavored to saturate the entire pulmonary tissue in the neighborhood of the diseased part. He argued that these injections were spread throughout the pulmonary tissue, and that, consequently, they reached the parts at the periphery of the diseased portion in such a dilute form as to be practically inert. It was necessary, therefore, to inundate the parenchyma of the lung so thoroughly with the fluid as to destroy all the bacilli present. That this was not done by the ordinary method was the explanation, he thought, of the want of uniformity in the results obtained.

The injections were made by means of a simple apparatus consisting of a graduated glass tube, of a capacity of 30 c.c. (1 ounce), to the lower end of which was attached a piece of flexible tubing of suitable length. To the other extremity of the tubing was fastened a large-sized hypodermatic needle, 10 c.m. (4 inches) in length. Before the injections were made the whole apparatus was thoroughly sterilized, and the needle, when not in use, was kept in a test-tube filled with a solution of carbolic acid. For the injections a solution of bichloride of mercury, of a strength of from 1–3,000 to 1–5,000 was employed.

The needle was passed from the anterior surface of the chest, at a point corresponding to the seat of the lesion, directly back to the posterior portion of the lung, care being taken not to exceed this limit and enter the pleural cavity. If the point of the needle should happen to lie within the lumen of a bronchiole, the entrance of fluid would excite violent cough, and for this reason the author was accustomed to allow but two or three drops to enter at first, and then, if there was no cough, a larger quantity could be safely injected. As the injection proceeded, the needle was gradually withdrawn so as to bathe the entire portion of pulmonary parenchyma lying in its course. If thought advisable, the needle could be moved about from side to side so as to spread the fluid over a greater area. But this was not ordinarily necessary, as diffusion occurred so readily that the entire apex would be bathed in the solution although it was injected only along a single line. Although as much as 40 to 75 c.c. of a 1–3,000 was injected at one time, and 75 c.c. of 1–5,000 at another, the author never saw any symptoms of mercurial poisoning. Only once, after a number of injections had been made, was a slight swelling of the gums noticed. It would seem, therefore, that no danger of poisoning is to be apprehended. The danger of wounding a blood-vessel would, however, appear to be more real. But there are few vessels of any considerable size at the apex of the lung, and Dr. Riva, in a ward of a hundred injections, never saw any signs which led him to suspect that such an accident had occurred. The injections were made very slowly, the operation usually lasting about an hour, and were repeated every three or four days.

The results obtained were not very brilliant, it must be admitted, although they were sufficiently encouraging to warrant a continuance of the experiments. The number of bacilli in the sputa were notably diminished, though in no case did they entirely disappear. The operation was well borne, and the patients complained of no discomfort during its continuance.

Dr. Riva is still experimenting with these large injections, and promises to communicate the results obtained in another paper. Judging, however, from the results of this first series, the method seems to offer no advantage over the ordinary form of pulmonary injections.

THE TREATMENT OF THE URIC-ACID DIATHESIS.

IN a recent series of articles on the treatment of gout and the uric-acid diathesis, Dr. Mortimer Granville (*Medical Press and Circular*) advances some views radically different from those ordinarily taught.

Dr. Granville appears to regard the presence of an excess of uric acid in the blood as the essential condition in this trouble. The local disturbances are due, he thinks, to accumulations of the acid in various localities —all of which is sufficiently in accord with prevalent views. But while admitting the excess of this acid in the blood, he does not admit the great acidity of the urine or that the urine contains less than the normal amount of urea, or a deficiency or excess of uric acid, according to the stage of the attack. He has tabulated the results of several hundred determinations made in cases of gout in its regular and irregular forms. The figures adduced showing specific gravity, acidity, and the proportional quantities of urea and uric acid in several groups of urine examined, do not appear to present any specially abnormal features, and thus bear out the negative opin

stated, although the author is careful to point out that it is premature to express a decided judgment.

In treatment, he does not give the so-called specifics, or alkaline carbonates, but advocates a medicine which, he claims, breaks up the uric-acid compounds. This drug is iodine, and it is believed to set free the acid from its bases. Large amounts of water are then to be drunk, for the purpose of "flushing" the kidneys and washing out the morbific matter.

Dr. Granville is an attractive writer and a "happy therapeutist," but we are inclined to share the criticism made upon his article by a contributor to the *Press*, who writes:

"On reading the articles which have appeared in your valuable journal during the last few weeks, one 'On Gout,' by Dr. Mortimer Granville, and the other touching on the same subject in 'The Neurotic,' by Dr. Milner Fothergill, one cannot help being struck by the very crude, undigested notions both gentlemen possess as to the formation of uric acid in the system. In dealing with gout and its cause, no writer on the subject can afford to be ignorant of the experimental researches of Professor Ebstein, of Göttingen, a translation of whose work on the subject ('Die Natur und Behandlung der Gicht') appeared in your pages, and which has, I understand, since appeared in book form. The value placed on Ebstein's researches is further shown by the fact that the volume has since been translated into the French language. To talk about the liver being the workshop in which uric acid is formed, after the appearance of Professor Ebstein's work, is a display lamentable enough to cover an Englishman with shame and confusion of face. Might one be indulged in the question, 'Are our therapeutics only abreast with our pathology?'"

Ebstein's theory, which is not universally accepted by any means, is that uric acid is manufactured by cartilaginous and connective-tissue metabolism, not by the liver.

UNIVERSITY COURSES AND MEDICAL EDUCATION.

THE average age of students who enter Harvard has been gradually increasing, until now it is nearly nineteen years. The alumnus of twenty-three who takes a medical and hospital course is nearly twenty-eight years of age before he begins to practise medicine. This is too old, and it is evident that such a course is not to be recommended. The average age at which German medical students begin professional studies is eighteen and four-tenths, and they begin practice when twenty-three and a half. English physicians begin when about twenty-four, and French when at about the same age.

In view of the above facts, says the *Boston Medical and Surgical Journal*, the Medical Faculty of Harvard University have recommended to the consideration of the Academic Council—a body representing the undergraduate department as well as the various schools—the expediency of granting the degree of A.B. to all undergraduates who shall subsequently take the longest course of study offered at the professional schools after three years' attendance (at the end of the junior year) in the Academic Department; the professional degree and that of A.B. to be given simultaneously at the end of the professional course, it being understood that the requirements of each have been fulfilled. The first year of a professional school would thus be made equivalent to the present senior year.

Dr. H. P. Bowditch, Dean of the School, proposes a still more radical change, viz.: (1) An academic course of three years, with requirements so graded as to lead to the degree of A.B. at an average age of twenty years; (2) a philosophic course of three years, with requirements so graded as to lead to the degree of A.M. or Ph.B. at an average age of twenty-three years.

In other words, Harvard is to go back to the courses or standards of twenty-five years ago for its A.B. degree.

Whether this is practicable or not, it is very certain that no large number of persons intending to study medcine will set out for themselves a course of study which does not equip them for work until they are twenty-seven or twenty-eight years of age.

Yet academic training is an invaluable help in medical work, and ought to be had whenever practicable. Students will, therefore, if wise, either go to smaller colleges, which let them out at twenty or twenty-one years of age, or the larger colleges must adopt some such plan as Dr. Bowditch proposes. Colleges or universities in which the freshmen are fully nineteen years of age are failures, as educators of medical men at least, and we believe it is much the same with lawyers.

THE DECLINE OF AMERICAN MEDICINE.

OUR young contemporary, the *Medical Standard*, writes in a very Stygian mood as regards the present condition of American medicine.

The fee-bills, it says, of most medical societies of the second decade of the present century are practically identical with those of the medical societies of the present time. American medical remuneration is now much less, proportionately, than it ever has been. With this decrease in pecuniary reward has come an almost equal decrease in social recognition. The physician no longer towers above the community as a member of that famous aristocratic triumvirate of the first three decades of the present century—the "parson," the "squire," and the "doctor." The "squire" has risen in prominence, but the "doctor" has fallen. Furthermore, we are told that there are no such towering giants as in the old days of Rush, and Mott, and McDowell. The scientific status of American medicine is also lower; and, in fine, we are all going to the bad. The explanation of all this is stated with a candor and precision characteristic of a great commercial centre instinct with true business feeling. It is because we as a profession have indulged too much in "humanitarian cant" and "canting pseudo-philanthropy," and have not kept pace with the business feeling and business methods of the age. The remedy, if we understand our contemporary correctly, is to give up philanthropy or, rather, pseudo-philanthropy, and conduct all professional affairs on business principles, or, to be more euphemistic, be guided by the principles of an advanced political economy.

The *Medical Standard* is no doubt right, in large measure, as regards the decline in compensation for medical services. In many parts of the country this is relatively lower than formerly; and in this city we know of

many of the older physicians who have been forced to lower their rates because these have been cut into by younger men, with no pseudo-philanthropy about them, but thoroughly penetrated with the principles of political economy as taught by advanced business men of the day. However, it has to be confessed, also, that a considerable part of medical work in the line of practice is done in a cheap way, by men who are really not trained to careful medical examinations and thoroughly rational methods of diagnosis and therapeutics. The country is full of cheap doctors, and the alertness of Americans is such that they appreciate the fact that most of their routine and empirical dosing is not worth a high price. We believe, however, that the best medical talent still commands as high returns as ever, while in many special lines of work the compensation is greater than formerly. There are also many more examples of first-class talent now than existed sixty years ago. We have many better surgeons, and more brilliant and accomplished men, than Valentine Mott, or Ephraim McDowell, or Payne, ever was. The day of oracles in medicine and surgery, to be sure, is past, and no one man will ever gain such supremacy as was done in the days gone by. But this is because times have changed, and the relations of physicians to each other and to the public are entirely different, Knowledge and the critical spirit are more widely diffused. American medicine is not on the wane; and it will, we trust, never entirely abandon humanitarian sentiments for business methods. Its hope lies in the continual improvement in the training of students and physicians, until the public learns that there is a difference between doctors, of a very decided kind; that good medical service is worth liberal compensation and pays best in the end.

DESCRIPTIVE SCIENCE.

A GREAT deal of what is contributed by medical men to current literature is simply of a descriptive character, and has value mainly because it is interesting to, and refreshes the memory of, those engaged in the same fields of work. How far even the records of accurate observation are from deserving a place with true science is illustrated by an anecdote told of Agassiz, when he was still a young man, and had but recently arrived in this country. At a meeting of a distinguished literary and scientific club of Boston there was a discussion of Dr. Hitchcock's then new book on "Bird Tracks," and the plates representing his geological discoveries were exhibited. The praises had been lavish, when a young foreigner, a stranger to most of them, arose and said: "The defect in this book is that it is dees-creep-teeve, and not com-par-a-teeve." With that sentence came the distinction in American science between scientific observation and scientific intelligence, between the art of perceiving and describing and the art of comparing and combining.

Few have this greater art, and most must be content with modestly and faithfully recording what is found new in the world of pathology. But even to be able to observe and describe accurately is no small talent, and so reports of cases, if reported well, must always have a value.

Since, however, most of our medical science is necessarily "dees-creep-teeve," additional pains must be taken that the descriptions show accuracy in every point, and that they contain no second-hand stories of familiar things.

BOB-VEAL AS A FOOD.

THE inspectors of the City Health Department recently seized several thousands of pounds of bob-veal. It is said that for every pound of this form of food captured five pounds are sold and consumed in the city.

The inquiry is sometimes made why bob-veal is treated with so little consideration by our health-officers. It is perfectly true that bob-veal is neither poisonous nor innutritious. The only objections are that it is a watery and rather indigestible substance, standing somewhat in the relation to good veal or beef that skimmed milk does to the pure article. Veal, as would be expected, has almost identically the same amounts of fat, nitrogenous matter, and salts, as beef. The tissues, however, have less osmazome, or flavoring-matter, are more insipid, and hard to digest.

It is a question, however, whether even the bobbest of bob-veal is not better food than the "lights" which are sold to and eaten by the poor. Bob-veal ought not to be sold for good veal; but under its own name, and at a low price, it might be admitted as an article of food.

A FURTHER STUDY OF FEVER.

Two series of lectures have recently been delivered upon the nature of fever, and in both we find scholarly and ingenious contributions to the subject. The Croonian Lectures, by Dr. Macalister, furnish the more elaborate discussion, and his views will attract, deservedly, much attention; for they present to the reader a decidedly new terminology and, in some respects, new conceptions, and place the pathology of fever in closer accord with modern physiological doctrines.

The temperature of our body is due to the action of a heat-generating mechanism, the great source of the heat being the metabolic changes in the muscles. The loss of heat is controlled by a heat-losing mechanism, mainly associated with vaso-motor and respiratory activity. The balance between heat-production and heat-loss is maintained by a heat-adjusting apparatus. These various processes are termed by Macalister thermogenesis, thermolysis, and thermotaxy. The three mechanisms are successively evolved as we ascend in the animal scale. Cold-blooded animals have little more than a thermolytic or heat-losing mechanism. Infants have only the thermogenetic and thermolytic, there being hardly any adjusting mechanism, as is shown by the instability of their temperature. Fever is a dissolution-process—the last mechanism evolved, the thermotaxic, gives way first, then the thermogenetic, and lastly the thermolytic. Conversely, when the patient convalesces thermolysis is first restored to normal, then thermogenesis, then thermotaxy.

The anatomical basis of these various mechanisms is as yet only partially made out. Wood claims to have shown that there is a thermogenetic centre, inhibitory in character, near the crucial sulcus in the dog, while Arohn-

son and Sachs find a heat-generating centre near the inner side of the corpus striatum. Stimulation of this region increases the temperature on the opposite side. Those nerve-centres whose influence promotes metabolic change are known as catabolic, and they correspond to the motor centres for muscle; those centres which inhibit metabolism are "anabolic," or inhibitory. There is good reason to believe that the thermogenetic mechanism has anabolic (centre of Wood's) and catabolic (centre of Arohnson and Sachs) centres. The thermic fibres below the medulla mingle with vaso-motor nerves so that they cannot be further followed.

The thermolytic mechanism is one which is intimately connected with vaso-dilator, vaso-constrictor, secretory, and respiratory functions. The vaso-motor system is, however, the great agency through which heat-loss is regulated.

A point of the greatest practical interest in connection with the modern study of fever is brought out again by Macalister. It is that, since fever depends upon a disturbance in the relations between heat-production and heat-loss, the condition revealed by the clinical thermometer may be very misleading. The patient, for example, with a temperature of 104°, may simply suffer from insufficient heat-loss, with perhaps a trifling increase in heat-production.

Practically, however, experimentation shows that heat-loss and heat-production work together quite closely, and that in fever, while both are affected, the increase affects the production a little more than the loss; hence the rise of temperature.

News of the Week.

A NEW MEDICAL JOURNAL is to be published shortly in Paris, under Professor Grancher's direction. It will be called the *Univers Médical*, and the editor intends to devote a much larger part to foreign news than is usually given in French papers.

CONSUMPTION is quite prevalent in Dakota, according to Dr. J. E. Engstadt, in the *Medical Age*. The Indians especially suffer from it, and so do the Norwegian immigrants.

HOW DR. MURRELL PREVENTED A SUICIDE.—In the preface to the last edition of an English medical work entitled "What to Do in Cases of Poisoning" the author, Dr. Murrell, says: "This work has reached a fifth edition, but it is not my fault, and I disclaim all responsibility in the matter. I am told that it has been the means of saving many lives, and I have no doubt this is true, for I hear that a gentleman who thought of poisoning himself changed his mind on reading the directions for treatment."

DR. HOLMES AND THE DRUGGISTS.—At a banquet given to Mr. Theodore Metcalf, by the Boston Druggists' Association, Oliver Wendell Holmes gave his opinion of apothecaries as follows: "I have always had a great opinion of the medical advice of apothecaries. The truth is, they put up the prescriptions of all the best physicians in the place in which they live, and they have the very cream of all their wisdom at their fingers' ends. So, when I have myself been suffering from any slight bodily inconvenience, I am ashamed to say—or ought to be, perhaps—instead of going to a professional brother, I have quietly crept into the back room and asked Mr. Metcalf what such and such a doctor was in the habit of prescribing."—*"Boston Medical and Surgical Journal.*

A JUBILEE HOSPITAL AT MONTREAL.—A telegram from Montreal states that Sir Donald Smith, Member of Parliament, and Sir George Stephen, President of the Canadian Pacific Railway, have offered to give $500,000 each for a new hospital, to be named the Royal Victoria Hospital. The city is asked to give a site on Mount Royal, adjoining the estate of the late Sir Hugh Allan. The building is to cost about $250,000, which would leave an endowment of $750,000. This, it is estimated, would bring in about half the necessary revenue for the maintenance of the two hundred patients for whom accommodation is to be provided.

THE WEST AND THE INTERNATIONAL CONGRESS.—The President of the Congress is a Western man. The home of the Secretary-General is in the West, and the sections are largely made up of Western men, many of whom have received their degrees from Western colleges.—*Weekly Medical Review.* Yet when the preponderance was of Eastern men great indignation was expressed.

HOSPITAL MISMANAGEMENT IN CHICAGO.—The warden and others of the officials of Cook County Hospital have been indicted for fraud by the Grand Jury, and, with several of the County Commissioners, with whom they were in connivance, will shortly be tried for fraud and malfeasance. The abuses which they have perpetrated are said to be flagrant and of long standing.

TRANSPLANTATION OF HUMAN BONE IN A CASE OF UNUNITED FRACTURE.—Professor A. Poncet, of Lyons, reports the case of a man of forty-three years who suffered from an ununited fracture of the tibia, the ends of the bones being atrophied and 35 mm. to 40 mm. apart. He removed the first phalanx of the great toe, on a limb recently amputated, sawed off the articular ends, and split the bone in two. One of these halves, 26 mm. long, was fastened between the freshened ends of the broken tibia, with due antiseptic precautions. Fibrous union took place at one end, osseous at the other. There was no necrosis.

AMERICAN PUBLIC HEALTH ASSOCIATION.—The fifteenth annual meeting of this Association will be held at Memphis, Tenn., on November 8 to 11, 1887. The subjects for discussion will be the following: 1, The Pollution of Water Supplies; 2, The Disposal of Refuse Matter of Cities; 3, The Disposal of Refuse Matter of Villages, Summer Resorts, and Isolated Tenements; 4, Animal Diseases Dangerous to Man. Dr. G. B. Thornton, of Memphis, will give all information concerning the local arrangements.

THE BILL FOR DRINKS.—The sum of $700,000,000 is spent annually for alcohol by the 15,000,000 drinkers of this country, and the sum of $600,000,000 by the 8,000,000 drinkers of Great Britain and Ireland. So the mother country is still ahead.

A Suit against the Health-officer of this Port and a rag-disinfecting firm has been brought by certain rag importers of this city. It is claimed that the rags were unlawfully detained in order to be put through an unnecessary patented disinfection process.

The Microbe of Typhoid Fever.—At a recent meeting of the Société des Hôpitaux, M. Chantemesse made an interesting communication concerning the morphological and biological characteristics of the typhoid-microbe. The sporulation of this microbe takes place between 19° and 48° C. (67° to 104.4° F.). It develops in water, even if sterilised. At a temperature of 45° C. (113° F.) the cultivations live for several days; they are destroyed by boiling. This microbe retains its vitality in damp ground. Corrosive sublimate (1 in 20,000) and sulphate of quinine (1 in 800) destroy it. Carbolic acid (1 in 400) has no effect on it; hydrochloric acid is also inert, therefore the acidity of the stomach is not inimical to this microbe.

Biniodide of Mercury as an Antiseptic.—Dr. P. K. Bolshesolsky, of St. Petersburg (*Vratch*, No. 11, 1887, p. 220), from numerous experiments made by himself in Professor A. P. Dobroslavin's laboratory, concludes that biniodide of mercury is a more powerful and less poisonous antiseptic than corrosive sublimate. Thus he fully confirms the observations of Bernhardy. A solution of 1 in 4,000 destroys putrefaction-microbes more completely than a sublimate solution of 1 in 2,000. The biniodide dissolved in a solution of iodide of potassium was recently tried, with apparently good results, in three cases of laparotomy, under Professor A. I. Krassowski. For washing the floor, a solution of 1 in 4,000 was employed; for disinfecting the hands, 1 in 2,000; for instruments, 1 in 2,000 and 3,000.

The Alleged Assault.—We take pleasure in stating that the practitioner who gave the certificate of assault referred to in our last issue is a German physician in good and regular standing, and that in giving his testimony he was guilty only of an error of judgment. We are glad to learn that the certificate was written under protest, with no desire to criminate a brother practitioner, and that it was used by the attorneys in the case in a different manner from that intended by the writer. The great mistake was in giving any certificate which should even indirectly reflect upon the moral character of a brother practitioner.

The Proposed Diphtheria Hospital in this City.—The necessity for a hospital specially devoted to patients suffering from diphtheria has been urged by the profession from time to time, but until lately no practical turn has been made in the proper direction. The *Morning Journal*, of this city, with commendable far-sightedness and logical force, has initiated a movement which promises as equally gratifying a result as has crowned its labors in the cause of tenement-house reform. It can be assured that in both it has the support of the profession. An appeal has been made to the public for funds, and there is no doubt that subscriptions from the more substantial of our citizens will be forthcoming. We have no doubt that such an institution, suitably constructed and properly managed, will not only tend, by isolating the patients, to check the spread of an alarmingly prevalent and fatal scourge among the poor, but will offer better opportunities for the treatment of the disease, and, by the enlarged experience of its medical staff tend still more largely to develop their therapeutical resources. The medical staff will be composed of gentlemen who have had ample opportunities for studying the disease in all its phases, and will command the confidence and support of the profession. It is proposed to construct a model hospital-building in a suitable locality, to admit thereto cases of diphtheria from the tenement-house districts, and, by means of a heated crib, to obviate any change of temperature during the transfer. The urgency for the establishment of such an institution is quite apparent in the fact that no general hospital will admit such cases, and that there is at present no building which has been specially set apart for diphtheritic patients.

A Critic Criticised.—Dr. F. M. Meyer writes to *Gaillard's Medical Journal* criticising the prevalent practice of writing the A.M. degree first after the name and then the M.D. As the M.D. degree is generally obtained first, it should, he thinks, be placed first. Dr. Meyer signs his name "J. M. Meyer, A.B., M.D., A.M." We would ask, however, how a person can be a Bachelor of Arts and a Master at the same time. It is much like a man being engaged and married cotemporaneously. Such things occur, but are generally thought bad form.

A Prize of Two Thousand Dollars (10,000 francs) is offered by the Académie de Médecine, Paris, for the best work on the treatment of stricture of the urethra or on the therapeutic methods for diseases of the urethra.

Dr. Edward T. Caswell died in Providence, R. I., on April 17th, in his fifty-fourth year. He was a son of the Rev. Alexis Caswell, at one time President of Brown University. He was graduated from Jefferson Medical College in 1857, studied a few years in Europe, and then settled in Providence.

Obituary.

JAMES STEWART JEWELL, M.D.,

CHICAGO, ILL.

We regret to announce the death of Dr. J. S. Jewell, of Chicago, Ill., which occurred on April 18th. Dr. Jewell had been in poor health for a considerable time, and although not so ill as to be compelled to relinquish his practice entirely, his condition was such as to cause grave apprehensions among his friends. He began to break down in health about five years ago, and a complication of disorders set in which he was never able to overcome. Dr. Jewell was born, September 8, 1837, at Galena, Ill. He was graduated at the Chicago Medical College in 1860, and two years later he settled in Chicago, where he remained in active practice till the time of his death. From 1864 to 1869 he was Professor of Anatomy in his college, and since 1872 had held the chair of Nervous and Mental Diseases. In 1874 he started a *Journal of Nervous and Mental Diseases*, which still exists as a prosperous periodical and has done much to promote neurological study in this country. Dr. Jewell was also instrumental in organizing and making successful the American Neurological Association. Dr. Jewell was of a studious and philosophic mind, yet he was a skilful physician, ingenious and practical in his methods. His services to American neurology are very great.

Reviews and Notices of Books.

A Reference Handbook of the Medical Sciences, embracing the Entire Range of Scientific and Practical Medicine and Allied Sciences. By various writers. Illustrated by chromo-lithographs and fine wood engravings. Edited by Albert H. Buck, M.D., New York City. Vol. IV. New York: William Wood & Co. 1887.

This volume of the "Reference Handbook" carries the work along from ICH to MIL. Some very important articles are embraced in these letters, such as Insanity, Kidney, Labor, Larynx, including a notice of O'Dwyer's method of intubation, Liver, Lungs, Micro-organisms, and Microscopy. These are only a few of the more important subjects which are treated at considerable length, but there are hundreds of other minor topics which are, in their way, of nearly equal importance, and which are discussed in a thoroughly practical and lucid manner. We mentioned, in a notice of a previous volume, a comparative table of the Centigrade and Fahrenheit thermometric scales, and we find here another very convenient table of the metric and British systems of linear measurements. Such tables are exceedingly useful, and even a necessity in the present period of transition, when all the Continental writers, and many also in England and America, use the decimal system; but the convenience of readers of the Handbook would be greatly promoted were the tables printed on loose sheets, for ready reference, as it is awkward, while reading an article in one volume to be obliged to turn to another to find a translation of the figures employed. The book before us contains, in addition to over five hundred wood-cuts, three chromo-lithographic plates illustrating Carcinoma and Sarcoma of the Larynx, and the different appearances presented by test-tube cultures of a number of the more important micro-organisms. The contributors to this volume are ninety-five in number. Among the more important articles may be mentioned those on "Inflammation," by Dr. W. T. Councilman; on "Insanity," by various authors. Some of the illustrations of this section of the volume are of great interest. Dr. Joseph D. Bryant has contributed a valuable article on the "Intestines." The articles on "Kidney," "Labor," "Larynx," "Liver," "Lungs," "Massage," "Micro-organisms," and "Microscopy" are remarkably complete. Aside from these, the great number of short, succinct descriptions and statements with which this volume is crowded give the work its chief value to the profession. We need only add that the high reputation which the work has already earned for itself is fully sustained in the present volume.

Alpine Winter in its Medical Aspects: With Notes on Davos Platz, Wiesen, St. Moritz, and the Maloja. By A. Tucker Wise, M.D., L.R.C.P., M.R.C.S., formerly Visiting Physician to the Infirmary for Consumption, Margaret Street, Cavendish Square; Physician to the Western General Dispensary, etc.; Author of "Davos Platz, and the Effects of High Altitude on Phthisis;" "Wiesen as a Health Resort in Early Phthisis," etc. Third Edition. London: J. & A. Churchill. 1886.

The appearance of the third edition of this well-known and highly appreciated treatise on the Alpine winter resorts will be welcomed by all who are interested, and what physician is not, in satisfying himself as to the relative merits of warm and cold climates in the treatment of pulmonary phthisis. The author justly insists upon the necessity of greater attention being paid to house ventilation in mountain winter resorts, where, of necessity, much time must be passed in-doors, and where the climate does not admit of ventilation through open windows. And especially interesting is his description of the Maloja Kursaal, in the construction of which the primary object has been to secure proper ventilation and heating, which would seem to have been effectually obtained. Dr. Wise is, of course, an advocate of high altitudes in a cold climate for the winter treatment of phthisis, yet he has presented his case fairly, and seems not to be blind to certain drawbacks which the Alpine resorts possess. The book will be found entertaining and instructive to all those interested in the climatic treatment of disease.

The Extra Pharmacopœia of Unofficial Drugs and Chemical and Pharmaceutical Preparations. By William Martindale, F.C.S., Late Examiner of the Pharmaceutical Society, and Late Teacher of Pharmacy and Demonstrator of Materia Medica at University College. With References to their Use abstracted from the Medical Journals, and a Therapeutic Index of Diseases and Symptoms. By W. Wynn Westcott, M.B. Lond., Deputy Coroner for Central Middlesex. Third Edition. London: H. K. Lewis. 1884.

The title fully explains the nature of this little book, which cannot fail to be of use, especially to those who have failed to keep thoroughly posted on the new remedies, and new applications of old remedies, concerning which so much is constantly appearing in the periodical literature of the day.

Transactions of the Academy of Medicine in Ireland. Vol. IV. 1886.

The present volume brings together a number of papers of varied and varying interest. Dr. J. M. Purser, in a paper on "The Therapeutic Uses of the Digestive Ferments," deprecates their use within the body, and any good results which would seem to accrue from the administration of pepsin, trypsin, or other ferments are due, not to the supposed chemical action which they exert in vital processes, but to suggestion. They are merely placebos; but ferments are of use to perform artificial digestion, and the administration of digested material is both scientific and attended by the best results. Such a paper as this is both timely and suggestive.

Dr. James Martin endeavors to prove the non-infectious nature of pneumonia from twenty-eight cases, no two cases, except in one instance, having occurred in the same family, though each patient was nursed in his poor and too often impure home by wives, mothers, sisters, and brothers, all in the closest contact. In the majority of cases the patient described his illness as originating with some especial exposure to cold air or wet clothes; the weather, too, was severely cold with a prevalence of sharp winds.

Dr. N. Langford Symes reports an extraordinary case of hyperpyrexia (temperature 108°) in rheumatic fever, and great success resulting from packing the patient in cloths wrung out of ice-water.

Mr. R. F. Tobin has an interesting paper on "The Surgery of the late Expedition to Suakim." In 129 cases, 93 were wounded by rifle-shots and 36 by sword or spear; 124 recovered—a very remarkable record when taking into consideration "the nature of the climate, the difficulty of conveyance by land and sea, the septic conditions implied by flies that made black by their presence every spot where they could obtain food."

Dr. Thomas Madden More discusses and describes Dr. Emmet's "buttonhole" urethral operation for chronic cystitis. One obtains an idea of laparotomy as it at present exists in Ireland from a paper by the same gentleman, and Dr. Atthill has a paper on "Ovariotomy," a case of sarcoma of the ovary furnishing him with the text.

Space will not allow us to mention several other papers of interest and the description of pathological specimens and conditions, all of which go to show that valuable work has been done in the society during the past year.

GOUT, AND ITS RELATIONS TO DISEASES OF THE LIVER AND KIDNEYS. By ROBSON ROOSE, M.D., F.C.S. Third edition, pp. 164. London: H. K. Lewis. 1887.

THE writer places before the reader a fine monograph on this subject, dealing with its pathology, discussing the uric-acid theories, relating the causes and symptoms, and giving the treatment and diet with which to cope with this aristocratic disease. The fact that the third edition is now before the public is proof of its value.

THE SCIENCE AND ART OF OBSTETRICS. By THEOPHILUS PARVIN, M.D., LL.D., Professor of Obstetrics and Diseases of Women and Children, in Jefferson Medical College, Philadelphia, etc. Illustrated with two hundred and fourteen wood-cuts and a colored plate. Philadelphia: Lea Brothers & Co. 1886.

THE author of the work before us has endeavored to write a clear and complete exposition of the science and art of obstetrics, and one which will be useful alike to students and practitioners—at least, so we are assured in the stereotyped phraseology of Dr. Parvin's preface. A careful examination of the book has failed to convince us of the necessity for its appearance. Aside from several standard English treatises, such as those of Barnes, Playfair, Leishman, we have the American works of Lusk, King, and Glisan, any one of which is at least equal to the volume prepared by Dr. Parvin.

It seems that the author is unduly impressed with the importance of French publications. The scant reference to the teachings of German writers constitutes, indeed, a noticeable feature of Parvin's obstetrics, thus forming a striking contrast to the able and scholarly treatise of Lusk. It is not always odious to compare, especially when comparison is boldly challenged by the presentation of new books that do not clearly show some advance over those already in the hands of the profession. Now, in our opinion, King's manual is preferable to Parvin's, on the score of condensation, precision, and positive teaching. Glisan's work, though less reliable for students, will be found more suggestive and more original. The English works are all more complete and thorough. The sum and substance of our criticism, then, is simply this, that the book before us was not needed at the present time, because we are already supplied with an abundance of excellent works on the same subject.

RESEARCHES UPON THE VENOM OF POISONOUS SERPENTS. By S. WEIR MITCHELL, M.D., and EDWARD S. REICHERT, M.D. Washington: Published by Smithsonian Institute. 1886.

THIS volume, which forms one of the series of the Smithsonian contributions to knowledge, is a valuable addition to what has hitherto been known as the subject of reptile poisons. By means of the snake-loop, as it is called, an ingenious device for seizing a serpent by the neck, it has been possible to collect venoms, to forcibly feed the reptiles and keep them alive for a longer period than heretofore. The authors have experimented with venom on birds and animals and reached the following important conclusions: That venoms bear a strong resemblance to the saliva of vertebrates; the active principles are contained in the liquid parts only. Micrococci are constantly present in fresh saliva, but have nothing to do with its violence. Dried venoms will retain their toxic properties for a long time. The toxic properties are globulines and peptones. The local effect of venoms is powerful, producing œdema, swelling, infiltration of the parts, and sloughing. It renders blood incoagulable. It softens the walls of blood-vessels so that they are unable to resist the normal blood pressure, and the blood exudes *en masse*. The shape of the red blood-corpuscles is changed; they become spherical, softened, and fuse themselves together into irregular masses. The direct action of venom on the nervous system is little, except that upon the respiratory centres, which it paralyzes. Death may occur through the paralysis of the respiratory centres, paralysis of the heart, hemorrhages into the medulla, and the altered condition of the blood-corpuscles. The respiratory centres are the most vulnerable.

Potassic permanganate, ferric chloride in the form of liquor or tincture, are the most available local antidotes. The fact that the active principles of venoms are proteids, and closely related to the normal constituents of the blood, renders it almost hopeless to search for a chemical antidote which can prove available after the poison has entered into the circulation. A physiological antagonist, therefore, is what must be sought. The investigators speak of the possibility of this discovery in a discouraged manner: "The activities of venoms are manifested in such diverse ways, and so profoundly and rapidly, that it does not seem probable that we shall ever discover an agent which will be capable at the same time of acting efficiently in counteracting all the terrible energies of these poisons."

MANUAL OF OPERATIVE SURGERY. By JOSEPH D. BRYANT, M.D., Professor of Anatomy and Clinical Surgery, and Associate Professor of Orthopædic Surgery, Bellevue Hospital Medical College; Visiting Surgeon to Bellevue Hospital; Consulting Surgeon to the Bureau of Medical and Surgical Relief of Bellevue Hospital; Consulting Surgeon to the New York Lunatic Asylum, and to the Northwestern Dispensary. With about eight hundred illustrations. New York: D. Appleton & Co. 1887.

THIS is in reality a second edition of this very practical work, the first having been published in different shape by another house. It has, however, been apparently in part rewritten, and bears proof of careful revision, both as to language and arrangement of the headings, thus greatly enhancing its value. The illustrations are more numerous, and those of the former edition which have been retained have been so retouched and lightened as to be worthy of the text and a real assistance in the comprehension of the operations described. The type and the paper are good, and the work is now presented in such a shape that it is a pleasure to study it. The subject-matter is excellent, and the author shows that he is not only a master of his art, but, what is equally important, possesses the not too common faculty of being able to impart his knowledge to others. We know of no better work on operative surgery to place in the hands of the student or of the young surgeon, and we cannot but congratulate the author upon the very presentable form in which his book is now offered to the profession.

OLFACTORY ACUTENESS.—Nicholls and Bailey have recently published the results of experiments upon the relative acuteness of the sense of smell in individuals. A series of solutions of oil of cloves, nitrite of amyl, extract of garlic, bromine, and prussic acid were prepared by successive dilutions with water until the limit of perception was reached, and then the solutions were placed indiscriminately and submitted to a number of persons of both sexes to classify them properly by the sense of smell. The results showed that on the average the sense of smell was much more delicate in the males tested than in the females; but the degrees of keenness ranged widely as between individuals. Thus three male observers were able to detect one part of prussic acid in 2,000,000 parts of water, though its presence was not revealed by a chemical test; but others, of both sexes, could not detect prussic acid in solutions of almost overpowering strength. The following figures give the average limit of delicacy of perception: Cloves—Males, 1 in 88,128; females, 1 in 50,667. Nitrite of amyl—Males, 1 in 783,870; females, 1 in 311,330. Extract of garlic—Males, 1 in 57,927; females, 1 in 43,900. Bromine—Males, 1 in 49,254; females, 1 in 16,244. Prussic acid—Males, 1 in 112,000; females, 1 in 18,000.—*Medical Press.*

Reports of Societies.

NEW YORK ACADEMY OF MEDICINE.

Stated Meeting, April 7, 1887.

A. JACOBI, M.D., PRESIDENT, IN THE CHAIR.

DR. A. J. C. SKENE'S memorial paper on

H. W. DUDLEY, M.D.,

was read by DR. THALLON, of Brooklyn, and was an excellent tribute to the memory of a most worthy member of the medical profession.

DR. ARPAD G. GERSTER then read a paper (see p. 453)

ON THE PROPER SELECTION OF ETHER OR CHLOROFORM AS AN ANÆSTHETIC.

The discussion was opened by the reading of the following letter from DR. H. KNAPP, addressed to the President:

"I regret to be prevented from attending the meeting of the Academy this evening, and, in compliance with your request, to take part in the discussion of Dr. Gerster's paper. If I may be permitted briefly to state my personal experience with chloroform and ether, it is as follows:

"From 1860 to 1874 I used chloroform in over three thousand cases. There was no fatal result, but many unpleasant and a certain number of critical cases. About once a month I had to resort to artificial respiration and other means of resuscitation. Having seen fatal cases in Berlin and Vienna, I was in constant dread.

"From 1874 to this day I have used ether in all cases of anæsthesia, in children as well as in adults, in drunkards, in persons affected with lung and heart diseases. No general complaint has been considered a contraindication. I have administered ether according to the so-called 'choking plan,' yet admitting of so much air at the beginning as to let the patient get over the impression of asphyxia. A great many of the operations that I had to perform could be finished during the period of primary anæsthesia; others lasted for hours, during which time the narcosis was kept up uninterruptedly.

"In several hundreds of successive etherizations I have taken notes of the course of the narcosis. The average time to bring about anæsthesia was *one minute and thirty-seven seconds.* There has been no fatal case, and only very few in which I had to interrupt, temporarily, the narcosis; none, as far as I recollect, in which it had to be relinquished. The secondary effects have not been more unpleasant than from chloroform. I use ether as the universal anæsthetic, consider it safer than chloroform, and just as manageable, if not more. Since I employed it my mind has been free from the anxiety which in chloroform I could never overcome."

DR. WEIR continued the discussion, and remarked that Dr. Gerster's paper conceded the important fact that chloroform was more dangerous to life than ether. But even admitting for a moment the additional risks that are said to come to an etherization from pneumonia and kidney complications, is the danger of the two anæsthetics at all equalized thereby? He thought not, decidedly not. The statistics, imperfect in many ways, go strongly against chloroform; the collection of Roberts from 1873 to 1880 gives but eighteen deaths from ether obtained from all sources all over the world. In the same period were collected in a similar manner by Turnbull ninety-two cases of deaths from chloroform. Moreover, a single journal, the *Lancet*, published in eighteen months, *i.e.*, from January 1, 1869, to July 1, 1870, seventeen deaths from the latter anæsthetic. He, in his turn, felt impelled to admit that ether was more dangerous than is supposed, due mainly, he thought, to

THE RECKLESS WAY IN WHICH IT IS GENERALLY ADMINISTERED,

and particularly in our large hospitals. As to the pneumonia which it is said to produce, he felt, while not denying it, that perhaps other reasons for this complication could be set forth, and the principal one was the undue exposure and cooling of large portions of the body during operations. Lung complications became more noticeable with him when antiseptics came into use, from the spray, and latterly from the incautious employment of the wet antiseptic towels and cold rubber cloths. Furthermore, he was unwilling to accept the dictum that a *pre-existing kidney disease contraindicated the use of ether.* He had, as most surgeons had, been compelled often to operate in such conditions, and since the articles of Emmet, Hunt, and others had called attention to the possibility of augmentation, not creation, of kidney trouble from the use of ether, he had taken more care in these cases to give ether carefully and moderately, and to keep his patient warm and free from exposure and draughts, and so far he had escaped mishap.

He individually could only speak of one serious result from ether anæsthesia. This occurred in a man who came into the New York Hospital in 1884, with symptoms of rupture of the bladder and commencing peritonitis. As the case was urgent he was immediately etherized, and an incision below the umbilicus begun. Vomiting occurred, and the patient became cyanosed and ceased to breathe. The autopsy showed a piece of undigested food from a recent meal to be lodged in the larynx.

Dr. Weir further stated that the whole number of deaths from ether in the old New York Hospital, from 1850 to 1870, out of about seven thousand seven hundred operations, was three. One occurred in the service of the late Dr. Allen, and has been already reported—and followed the first incision for a tumor of the jaw (an irritation which Schiff has shown will often arrest respiration). The second happened during an operation by Dr. Markoe for strangulated hernia, the man's head being very low down in the bed, the hips having been elevated to facilitate the re-entrance of a large mass of intestine to the abdominal cavity. The third took place in 1860, under the charge of Dr. Bell, the house surgeon, who reduced under ether a very large double scrotal hernia which, not previously reducible, had become incarcerated. No cause for the death was revealed by the autopsy, and it was believed that the replacement of

THE INTESTINES INTO THE LONG-EMPTIED ABDOMEN

had interfered with the diaphragm and heart-action. Since the rebuilding of the New York Hospital in Fifteenth Street, in 1876, there have been performed 2,289 operations, with 2 deaths from ether—one of which, his own, has already been given; the second of this series was met with in 1882 in a case of extravasation of urine. On making incision into the perineum, death suddenly came on. The autopsy showed a fatty heart. In the House of Relief (a branch of the New York Hospital) there have been, since 1876, 802 operations, with 1 ether death. This was encountered in 1886. While operating (under ether) on a man with crushed fingers, it was noticed that the venous oozing suddenly ceased, and death followed in a few minutes. A post-mortem examination revealed tubercular lungs and an atheromatous aorta. Summing up this experience, which represents one of the largest hospitals in the country, there are found 6 deaths from ether in 10,791 administrations, or 1 death in 1,796 cases; or, if the choking case is eliminated, there would be 1 death in 2,158 cases. Dr. Weir thought that this experience would more or less be confirmed by other hospitals should they publish their cases, though a sharp distinction should be made in the cases of deaths from ether and those dying during etherization.

Nevertheless, while admitting, as before stated, that ether was dangerous, and more so than is usually estimated, yet, had he to be operated on, and had he, moreover, damaged kidneys, he would think himself safer under anæsthesia from ether than if chloroform was used.

Dr. Lewis A. Sayre continued the discussion (see p. 458).

Dr. W. Gill Wylie said that his experience had been favorable, and that he had not lost a patient during or very near to the time of the operation until quite recently, when his experience had been rather sad. Within two months he had lost two patients who had been anæsthetized with ether, and their deaths, he thought, could be attributed directly to the anæsthetic. He could accept almost all that Dr. Gerster had said, except that he would reverse the statement, and say that he would prefer to give ether on account of its being safer, but that in a certain number of cases chloroform should be used. He believed that Dr. Gerster was perfectly correct in regard to what he had said concerning

THE RECKLESSNESS WITH WHICH ETHER IS GIVEN IN MANY PUBLIC INSTITUTIONS.

Dr. Wylie was certain that it was true of some institutions in New York. In the lying-in room he used chloroform, and he had never had any accidents with it. He had reached these conclusions: The frequent repetition of ether created in the person a tolerance which was sometimes very unpleasant when general anæsthesia was desirable. In very fat persons anæsthetics were especially dangerous. Three or four years ago he favored the use of ether in almost all cases. Now he would, as a rule, use ether; but in many cases, especially if the kidneys were affected, or there was reason to suppose that the lungs were seriously affected, he would prefer chloroform. He would always use chloroform in the lying-in room, and generally in children. Dr. Wylie then detailed his two fatal cases; one was an umbilical hernia in a very fat person, and the other a case of abdominal tumor, in which, before the operation, the urine gave no evidence of kidney disease, but the autopsy revealed chronic interstitial nephritis with an acute attack.

Dr. Weir believed that all peritoneal operations should be excluded when collecting deaths from ether.

Dr. John A. Wyeth had formulated his views regarding ether and chloroform as follows: Chloroform must be preferred in almost all operations in children under *six* years of age, and in women during childbirth. Chloroform may be preferred to ether when ether has been tried without producing anæsthesia. Chloroform may be used when ether cannot be obtained. With the exception of nephritis, he had not seen any reason for changing these conclusions.

He had almost always used ether in both hospital and private practice, and during the last eighteen years he had not had an accident from it, certainly not a death. He had not met with the class of cases described by Dr. Gerster—namely, that in which the patient resists anæsthesia so much that chloroform must be substituted for ether. Nor had he encountered pneumonia. He thought that there was danger from pneumonia after all prolonged operations, and that in one of Dr. Gerster's cases, in which

THE OPERATION LASTED SIX HOURS,

the same pulmonary complication might have occurred if chloroform had been used. He believed that Dr. Sayre's success in the use of chloroform could be accounted for largely on the ground that he had used it more in children and in cases of parturition than in other cases.

With regard to statistics, he had found in "Agnew's Surgery," second volume, a careful analysis of all the deaths that had occurred from ether and chloroform from 1869 to 1872, and there were one hundred and ninety-five from chloroform and six from ether. In three of those charged to ether the E. C. mixture was used, and these three fatal cases Dr. Agnew eliminates.

Dr. Robert Abbe had seen one death from ether. There was a compound fracture of the leg, and the patient had tetanus. Dr. Little proceeded to amputate under ether. The patient died upon the table, with intense rigidity of the whole body. He believed that the danger from pneumonia or acute bronchitis, and from nephritis, were under the control of the surgeon, while

THE DANGER FROM CHLOROFORM IS ABSOLUTELY BEYOND THE CONTROL OF THE SURGEON

in a considerable proportion of cases. He believed that the pneumonia and bronchitis referred to were due to exposure of the patient. He had operated under ether, in cases of necessity, and without disaster, although the urine contained albumen and casts.

Dr. Mundé had used both ether and chloroform extensively, but had not seen any deaths that could be referred to the anæsthetic. He had, however, seen three cases abroad—one in a man, the other two in children—where chloroform was administered, and only the most active and decided measures saved the patients from death.

In two cases, after prolonged operations under ether and on lifting the patient up, he had seen syncope, which he felt quite certain would have proved fatal had not very active measures been adopted. His feeling was, after having been bred abroad to use chloroform, that

ETHER IS THE SAFER OF THESE TWO ANÆSTHETICS

when properly administered. He felt that the remarks of Dr. Gerster regarding the recklessness with which anæsthetics were given were highly commendable. In hospitals it was generally left to those who were last admitted *and the least qualified* to perform what was one of the most important duties connected with a surgical operation, which was all wrong. The administration of the anæsthetic should be intrusted to skilled persons only. In all long operations he preferred to use ether, and with Clover's inhaler. He had noticed that, in some cases, it was impossible to get the patients under the proper influence of ether, and it was only when he had changed to chloroform that they had been properly anæsthetized. He had almost always given a bromide salt, but sometimes a hypodermatic injection of morphine before beginning the anæsthetic.

For short operations he preferred chloroform, and also in obstetrics, except where he wished to stimulate uterine contractions in tedious labor.

Dr. R. W. Amidon noticed that the writer of the paper had stated that the only contraindication to chloroform was a weak heart, but at the same time it was well known that death occurs unexpectedly and much more so than when ether is given, in by far the greater majority of cases. That had been stated as well by Dr. Reeve as anyone, in Holmes' "Surgery," who says, "It is one which no far-sightedness can discern, no precaution can avoid, no skill avert." Another point to which Dr. Gerster had very properly called attention was

THE DISADVANTAGE IN THE USE OF ETHER FROM THE COLLECTION OF MUCUS IN THE AIR-PASSAGES.

Dr. Amidon thought that if the precaution was taken to use the prophylactic measure to which he had called attention, that is, preliminary injection of one-sixtieth to one-fiftieth of a grain of sulphate of atropia, or by the mouth some preparation of belladonna, that the respiratory act would be improved and that the bronchial and tracheal secretion would frequently be lessened, and the disadvantages arising from ether, in this particular, would be substantially done away with. He believed that this precaution had been used by Dr. Weir and by Dr. Thallon, with good results.

Dr. Thallon, of Brooklyn, said that he had listened

with a great deal of interest to the paper of the evening, and yet it had impressed him as one that was somewhat one-sided. He quite agreed with Dr. Weir that ether was not absolutely contraindicated by the presence of albumen and casts in the urine, but the presence in the urine of these evidences of kidney disease should make the surgeon

MORE CAUTIOUS IN THE ADMINISTRATION OF ETHER.

The question of the use of either or chloroform was largely one of dosage, and he preferred the ordinary apparatus used by dentists, with which the patient, very much as with Dr. Sayre's apparatus, breathes the air impregnated with the anæsthetic and expires the foul air through another opening. He had never had the trouble of which Dr. Gerster had spoken; that is, the patients kicking around the table, and he had given anæsthetics many hundreds of times. He believed that the bad effects of ether were due largely to the ignorant and indiscriminate way in which it was used. He first noticed in the *Lancet* the use of atropia before beginning the inhalation of ether, and he had used it with so much benefit that he had practised carrying a solution of it in his pocket or case, and administering it as a prophylactic, especially against undue secretion of mucus in the respiratory tract.

Dr. Gerster, in closing the discussion, said it was very strange, after having tried to appear unbiassed, that he should be charged with partiality, as he had been, by nearly all who had spoken with the exception of Dr. Sayre. He was not astonished at it, however, because everyone of the gentlemen who had spoken was evidently one-sided, and his position as stated in his paper had been entirely misunderstood.

He said, and still maintained, that it was one-sided to say that chloroform was the only anæsthetic that should be used, just as it was unsound to claim that ether was the only anæsthetic to be employed.

He regarded ether as the less dangerous of the two in the general run of cases. But the hospital surgeon who operates every day, and perhaps on many cases, will encounter many more cases in which it is not only difficult, but impossible, to produce the desirable complete relaxation with ether, than those who have occasion to give an anæsthetic only a few times in a year, and he would repeat that there are patients who cannot be brought into complete anæsthesia with ether, even though administered by Dr. Thallon himself. Under such circumstances

THE SURGEON MUST USE CHLOROFORM,

and he is a poor surgeon if he is afraid to use it, as many of the gentlemen seemed to be. He did not say that he would use chloroform in all cases, but would use ether, as the rule; but where there were present the contraindications which he had enumerated, he would employ chloroform, and surgeons should know how to use it and should not be afraid to use it.

With regard to statistics, he would not give *five* cents for all that had been brought forward; they were worthless. He was aware that deaths from chloroform had been hunted up, and he also knew of a number of deaths upon the table from ether that had never been reported, and never would be published. He knew of *five* cases of death from ether in *one* hospital which had not been published. There was no doubt about deaths occurring on the third, fifth, and sixth days, etc., from nephritis or pneumonia after anæsthesia by ether, and yet these cases were not reported. Therefore the statistics given by Dr. Weir did not have the merit of truth which they should have in order to be reliable. If the absolute number of deaths from all anæsthetics could be ascertained, then proper conclusions could be drawn concerning the relation and the comparative safety of each one. Therefore, he believed that the argument by statistics should not be admitted in the discussion of so serious a question.

With regard to the occurrence of *pneumonia*, he had also been misunderstood. He did not understand that the pneumonia and bronchitis were due to the inhalation of cold vapor or exposure of the patients in the corridors or wards of hospitals, or in operating-rooms. He believed that there was a much more direct

INSULT TO THE RESPIRATORY TRACT

in the mucus that had collected and undergone change. Before the inhalation of ether the breath of the patients might be sweet, but having been anæsthetized it was not uncommon for it to have an odor of decomposition that was a source of great discomfort to those who came near them, and this decomposing mucus in the oral cavity and trachea finding its way into the lungs was the much more probable cause of the bronchitis and pneumonia than the inhalation of cold vapor or the exposure referred to. In the presence of micro-organisms in the buccal cavity and stomach rapid decomposition of mucus might take place, even during the production of anæsthesia, and this mucus was very liable to be drawn into the lungs.

He had tried to say that both ether and chloroform were used extensively as anæsthetics. If used intelligently and properly they are ordinarily safe. Sometimes fatal results will follow one as well as the other. These were facts admitted by both the advocates of ether and of chloroform.

He had endeavored to show that the entire question of the greater safety of the one over the other rests upon opinion, as there had not been brought any absolute proof that either ether or chloroform was the safer or the more dangerous. So long, therefore, as the question must remain as a matter of opinion, was there justice or common-sense or fairness in the position taken by many physicians by saying that anyone who administers chloroform for general *surgical* anæsthesia deserves criminal prosecution? Against that spirit he would beg to protest, and that was the real reason why he brought the subject before the Academy. So long as the question was an open one, he believed that the Academy should protest against such a view.

The Academy adopted the report of the Council that it had had under investigation charges made against a Fellow for giving a certificate which subsequently had been published extensively as an indorsement of a proprietary medicine, and recommended that the Fellow be informed that the writing of such

A CERTIFICATE WAS OBJECTIONABLE.

The Academy then adjourned.

Formulæ for Lanolin Salves.—The manufacturers of Dr. Liebreich's lanolin salves have published a list of formulæ for their preparation. The following are some of them: 1. Unguentum belladonnæ: Extr. belladonnæ 5.0, lanolini 45.0. Unguentum potassii iodidi: Potassii iodidi 20.0, aqua 10.0, adipis suilli 20.0, lanolin 150.0. 3. Unguentum carbolic.: Acid. carbolic. 5.0, adipis 5.0, lanolini 90.0. 4. Unguentum acid. pyrogallic.: Acid. pyrogallic. 10.0, adipis 10.0, lanolini 80.0. 5. Unguentum acid. salicylici: Acid. salicyl. 10.0, adipis 20.0, lanolini 70.0. 6. Unguentum hydrarg.: Hydrargyri 50.0, lanolini 12.5, ung. hydrarg. 2.5. 7. Unguentum iodoformi: Iodoformi 10.0, adipis 10.0, lanolini 80.0. 8. Unguentum chrysarobini: Chrysarobini 10.0 to 25.0, adipis 10.0, lanolini 80.0. 9. Unguentum picis liquid.: Picis liquid. 20.0, lanolini 80.0. 10. Unguentum ichthyoli: Ichthyoli 10.0, lanolini 90.0.

Veratrum in Pneumonia.—Dr. J. W. Maddin, of Nashville, makes a plea for the use of veratrum viride in pneumonia, to be used in the stage of engorgement always, and never after this period.

Correspondence.

OUR LONDON LETTER.

(From our Special Correspondent.)

THE SOCIETY OF APOTHECARIES AND THE "CONJOINT SCHEME"—SOME CASES OF RENAL DISEASE—INCISING THE OPTIC SHEATH FOR SWOLLEN DISK—DR. BROADBENT ON THE PULSE.

LONDON, March 28, 1887.

As was anticipated, the two colleges have refused to allow the Society of Apothecaries to combine with them and thus to become a party to the "conjoint scheme." The earnest recommendation of the medical council has availed for naught. That body, indeed, has sowed the wind and is now reaping the whirlwind. Its vapid utterances in former times have so discredited it in the eyes of the profession and the governing bodies of the various corporations, that its protest now passes unheeded. The consequences in the present instance will be that the Society of Apothecaries will obtain the power to give a complete diploma, and an inferior grade of general practitioners will be inaugurated who will compete with the holders of the "conjoint diploma," very much to the disadvantage of the latter.

Several interesting cases of renal disease have lately been brought before the societies. At the last meeting of the Medical and Chirurgical Society, Mr. Godlee read a paper in which he gave the history of a unique case of renal calculus causing suppression of urine. The remarkable feature of the case was that the suppression was complete, but the calcular disease was only on one side. After acute pain in the right loin and other symptoms of renal disorder a perinephritic abscess formed on the right side, and was opened. The kidney could not be found at the operation. The casts disappeared completely from the urine, and the albumen became very small in amount. The wound healed and the patient remained well for a time. A year later he was seized with a severe attack of renal colic and in a few days complete suppression of urine supervened.

No operation was undertaken, because it was assumed that there was only one working kidney, the ureter of which had become blocked. After the suppression had lasted five days, however, the left kidney was felt and punctured, but its pelvis was found to be empty. Two days later the patient began to pass highly albuminous urine. This became more normal day by day, but the patient died exhausted in less than a week. At the autopsy the right kidney was found to be dilated into a loose bag of pus and a stone was impacted half-way down its ureter. The latter, however, was dilated throughout its whole extent. The left kidney was large and comparatively healthy, except that it showed signs of chronic interstitial nephritis. The pelvis and ureter on the left side were normal.

Mr. R. W. Parker read a paper on a case of suppression of urine following injury to a sacculated kidney containing calculi, the other kidney being entirely disorganized.

At the Medical Society Dr. Ralfe showed an oat-shaped calculus (chiefly composed of oxalate of lime) which had been passed after six weeks' treatment. It was a third of an inch in length, and weighed three grains and a half. The treatment employed was the administration of a mixture containing lithia and turpentine. Dover's powder was given at night. The patient was also directed to drink three pints of filtered rain-water daily. Under this régime the specific gravity of the urine fell from 1.025 to 1.014, blood and pus disappeared from it, and the attacks of renal colic became less frequent. Dr. Ralfe remarked that his method differed from that of Sir William Roberts in that he did not seek to lessen the size of the calculus by chemical solvents, but by checking its growth, reducing the specific gravity of the urine, and diminishing existing pyelitis, to allow free passage to the concretion. There were many calculi, said Dr. Ralfe, that were small enough to slip down a ureter, but they were prevented by the swollen condition of the orifice. In addition to distilled water and turpentine he also thought highly of benzoate of lithia or potash.

At the same meeting of the Society Mr. Brudenell Carter read a paper on a case of swollen optic disk, in which he had, by a new operation, incised the sheath behind the eyeball. The patient was a young woman who sought advice for headache and impaired vision in the left eye, of ten days' duration. On ophthalmoscopic examination the optic disk was found much swollen. Iodide of sodium and mercurial inunction were prescribed, but without benefit. The swelling increased, and hemorrhages appeared in it. Mr. Carter then divided the external rectus muscle, rotated the eyeball inward, exposed the nerve, and, opening its sheath, let the fluid exudation escape. The patient made a good recovery and the symptoms disappeared. Sight had begun to return in the previously blind temporal half of the field. Mr. Carter remarked that De Wecker had in 1872 unsuccessfully attempted to open the sheath without the aid of sight by employing a specially curved knife. The method he had himself employed (of previously dividing the muscle) allowed the operator to see what he was doing, and the procedure could be carried on without danger.

In his recent Croonian Lectures at the College of Physicians Dr. Broadbent has been discoursing on "The Pulse," a subject to which he has devoted much attention. Although one of the early workers with the sphygmograph, he has not a very high opinion of its clinical value, as it requires considerable skill and experience to use it to advantage. He remarked: "It is rarely necessary for diagnosis, and scarcely ever to be trusted in prognosis." The pulse was not, he said, as commonly stated in text-books, an expansion of the artery; nor was it a sinuous movement of the vessel in its bed. It was the change of shape from the flattened condition impressed upon the artery by the finger, or by the sphygmographic lever, to the round cylindrical shape which it assumes under the distending force of the blood within it, that constituted the pulse that we observe clinically. It was a misconception to suppose that the pulse signified onward movement of the blood in the artery. Remarking on the fact that for all ordinary purposes we took the pulse at the wrist, Dr. Broadbent remarked that, as a matter of observation, we knew that the pulse at the wrist indicated the state of the circulation generally. The fact, also, that the hand had no special circulation of its own liable to extreme variations for functional purposes, made the radial pulse more trustworthy.

OUR PARIS LETTER.

(From our Special Correspondent.)

HYPNOTISM AND MENTAL SUGGESTION.

PARIS, April 1, 1887.

"SUGGESTION" is decidedly taking its place in the domain of clinical therapeutics, and it has even passed the threshold of the Faculty of Medicine, in proof of which we have only to refer to the recent works of Dr. Gilles de la Tourette, and of Professor Bernheim, of Nancy. In his preface the latter author gives the following definition of suggestion: "Suggestion, which dominates the greater part of the manifestations of hypnosis, the pretended physical phenomena, is nothing else than psychical phenomena. It is the idea conceived by the operator, which, seized by the hypnotized subject and accepted by his brain, realizes the phenomenon, favored by an exalted suggestibility, produced by the special concentration of the hypnotic state." In other words, suggestion signifies the penetration of the idea of the

phenomenon in the brain of the hypnotized subject by speech, gesticulation, sight, imitation. We are far from the empirical interpretations of animal magnetism and of mesmerism; with the aid of special fluids, they are nothing more than the phenomena of suggestion. This view would, moreover, give the key of Braidism, and somnambulism itself is only an advanced degree of hypnotism, or profound sleep, with unconscious suggestive phenomena. Professor Bernheim could not help paying a just tribute to Dr. Liébault, of Nancy, who for the last twenty-five years has devoted himself with the greatest disinterestedness and courage (for he has had to brave a good deal of sarcasm and ridicule) to the study of the treatment of maladies by sleep, confessing at the same time that having for a long time been himself sceptical, he yielded only after having been convinced by the hypnotic cure of a hystero-epileptic subject, affected with contracture of the right leg of three months' duration, and at the same time subject to convulsive attacks which were renewed five or six times a day. Professor Bernheim's work is composed of two parts. In the first part the author treats of the different degrees of hypnotism which his method can produce (they are six in number), and he analyzes the different phenomena presented by the hypnotized subjects, among the most curious being post-hypnotic suggestions in somnambulistic subjects, with unconsciousness at waking.

The suggested acts, explains the author, sometimes meet with resistance on the part of those who are subjected to them, but in general they are entirely accomplished. The same is the case with sensitive sensorial suggestions, and with simple or complex hallucinations which may be provoked. In a very important chapter of the work the author treats of the subject in a moral and psychological point of view, and examines the relations of suggestion with the civil and criminal laws, the hypnotizer deserving all the severity of the law without extenuating circumstances, the responsibility of the hypnotized subject being almost completely annulled. In the second part of the work the author treats of suggestion applied to therapeutics; in other words, the imagination as a curative agent. Nobody has ever denied the efficacy of this powerful factor, and it is to its influence that should be attributed the credit of thaumaturgists and healers of disease by verbal assurance, who still work on the credulity of the ignorant. To provoke by hypnotism this special psychical state, and to operate, in view of cure and of relief, the suggestibility thus artificially excited, such is the rôle, according to M. Bernheim, of psycho-therapeutical hypnotics. The action of remedies at a distance, referred to in your note on the subject in THE MEDICAL RECORD of March 19th, would be an exemplification of mental suggestion. As a general rule, states the author, the action obtained is more rapid and more complete with profound sleep. It is, therefore, in somnambulism that suggestion acquires its maximum of efficacy, that cures are often instantaneous and assume a miraculous appearance. The numerous cures which are affected each year at the grotto of Lourdes, a place of pilgrimage in France, cannot have any other explanation, according to the same author, than religious auto-suggestion, in very narrow relation with hypnotic suggestion, but as he does not wish to attack religious faith, nor injure religious sentiments, he has manifested a praiseworthy circumspection in this respect. He has published in detail the cases of seventy-nine patients in proof of his assertions, and which he considers are sufficient to induce others to adopt this new therapeutical method. The case of permanent cure of writers' cramp by patient and persevering suggestion appears to be the most remarkable.

At a recent meeting of the Academy of Medicine, Dr. Lochard exhibited, on the part of Dr. Mondot, of Oran, an entire tibia which was removed in December last from a woman aged thirty, a scrofulous subject, who was affected with suppurating osteitis of that bone. The periosteum was detached in its entirety and the bone was sawn off with a chain-saw. A new tibia was reproduced, and two months after the operation the patient was able to walk about, which she still does, with the aid of a boot made specially for her.

Dr. Doleris, a rising accoucheur, has performed a certain number of experiments which show that injections of corrosive sublimate into serous cavities, and that the washing of wounds with this substance, even in the proportion of 1 to 1,000, are eminently toxic. The accidents by which this intoxication are manifested are: Lowering of the body temperature, colliquative diarrhœa, considerable weakening of the muscular system, albuminuria, etc. The conclusion arrived at by the author, which he recently communicated to the Biological Society of Paris, is that the corrosive sublimate, which is an excellent antiseptic, ought to be reserved for the disinfection of the skin, the hands, instruments, and in a general manner for all articles of dressing, but for the washing of wounds and of large serous and mucous surfaces, it should be absolutely proscribed.

"SEXUAL PHYSIOLOGY AND MOHAMMEDAN WOMEN."

To the Editor of The Medical Record.

SIR: In your issue of February 12th, p. 192, is a short article entitled: "Sexual Physiology and Mohammedan Women," which makes certain assertions on the authority of Dr. Zambaco. These statements may all be true for the Mohammedans among whom the doctor lives, but many of them do not hold good for those of Syria. I have lived here for several years and have carefully inquired of other physicians into the subject, but in no case have I ever heard of a girl being circumcised. I have been told that in Egypt the operation is performed. Marriages take place at a very early age, not only among Mohammedans but among all Christian and other sects, though it must be remembered that the girls of the East are several years in advance of those of the West in point of physical development. I have been told on good authority of a woman of Damascus who was a grandmother at the age of twenty-one.

In consequence of these early marriages, probably, fecundity is rare; for abortions are rare, and it is the wife's highest ambition to bear her husband a son. Sterility is as great a cause for reproach as it was among the Jews of old, and it is a common cause of divorce or of the husband's taking a new wife. The honor attached to having a son is so great that the mother frequently loses her identity and is known as the mother of such a one, *e.g.*, Im Amin—the mother of Amin. Uterine disorders may be common, but they are not known to the physician, as he has no access to the females, married or unmarried.

It must be remembered that the Mohammedans number some two hundred millions, thirty millions of whom are under Turkish rule, while the others are found in Persia, India, and Africa, extending from Egypt to about the great lakes, so no one rule can be given to cover all these people. Truly yours,

THOMAS W. KAY, M.D.

BEYROUT, SYRIA, March 14, 1887.

THE ANTIQUITY OF PRESERVATIVE INJECTIONS.

To the Editor of The Medical Record.

SIR: In your summary (MEDICAL RECORD, March 12th, p. 302) of Dr. Laskowski's work on embalming, etc., it is stated that: "It was not until the present century that embalming and the preservation of subjects was undertaken by means of injections into the vessels. Dr. Franchina [Tranchina], of Naples, and, almost at the same time (1835), Lauth, of Strasbourg, conceived the idea of

forcing preservative fluids into the blood-vessels." As a matter of history, in 1775, sixty years before these attempts at preservation by Tranchina and Lauth, Dr. Wm. Hunter, assisted by Cruikshank, injected turpentine and spirits of camphor into the femoral and other large arteries, for the purpose of preserving the body of a woman; and the operation is spoken of as if it were not an absolutely new proceeding even then (Pettigrew's "History of Egyptian Mummies," London, 1834, p. 258, and Dr. Wm. W. Keen's "History of Practical Anatomy," Philadelphia, 1874, p. 36).

In your summary ought not the name "Gaunal" to be Gannal, and "Franchina" to be Tranchina?

Yours,

S. H. GAGE, M.D.

CORNELL UNIVERSITY, ITHACA, N. Y., March 22, 1887.

[The systematic use of preservative injections dates at the period we mention.

Gannal is the proper name, not Gaunal, as our printers made it. Franchina is the name given by Laskowski.—ED.]

Army and Navy News.

Official List of Changes in the Stations and Duties of Officers serving in the Medical Department, United States Army, from April 10 *to April* 16, 1887.

RICHARD, CHARLES, Captain and Assistant Surgeon. Granted two months' leave of absence on surgeon's certificate of disability. S. O. 82, A. G. O., April 9, 1887.

KANE, JOHN J., Captain and Assistant Surgeon. Resigned April 13, 1887. S. O. 85, A. G. O., April 13, 1887.

WALKER, FREEMAN V., First Lieutenant and Assistant Surgeon. Ordered from Fort McIntosh, Tex., to Post of San Antonio, Tex. S. O. 45, Department of Texas, April 11, 1887.

APPOINTMENTS.

CABELL, JULIAN M. To be Assistant Surgeon with the rank of First Lieutenant, to date from April 14, 1887.

WOODRUFF, CHARLES E. To be Assistant Surgeon with the rank of First Lieutenant, to date from April 14, 1887.

The Army Medical Board, New York City, N. Y., is dissolved. S. O. 82, A. G. O., April 9, 1887.

Official List of Changes in the Medical Corps of the United States Navy for the week ending April 16, 1887.

GRIFFITHS, S. H., Passed Assistant Surgeon. Detached from the U. S. S. Lancaster, and waiting orders.

HIBBETT, C. T., Passed Assistant Surgeon. Detached from duty on ironclads, City Point, Va., and waiting orders.

MARSTELLER, E. H., Passed Assistant Surgeon. Ordered to duty on ironclads, City Point, Va., the 20th instant.

PROFESSOR VERNEUIL still continues to teach at La Pitié, and is as full of vigor and energy as he was when I first heard him twenty years ago. My time had been so much occupied in other directions that I have not been able to follow him regularly. He has, however, a hobby which he is riding just now, and that is, the discussion of glandular tumors by the interstitial injection of a ten per centum solution of iodoform in ether. His results are apparently very good.—Cor. *Chicago Medical Journal.*

New Instruments.

AN IMPROVED OPHTHALMOSCOPE.

BY FRANCIS VALK, M.D.,

NEW YORK.

IN estimating the refraction of the eye, or the elevations and depressions that may occur at the fundus, the ophthalmoscope has become one of the most useful instruments in the hands of the ophthalmologist. This instrument has been subject to many changes and improvements until we have found almost the perfection of the ophthalmoscope in Dr. E. G. Loring's last design, which, in the arrangement of the glasses, their size and accuracy of refraction, and the large number of combinations, with the added quadrant, besides its neat, light, and mechanical workmanship, leaves almost nothing further to be desired.

In the use of this ophthalmoscope for the past four or five years, it has seemed to me that if some mechanism could be devised by which the various lenses could readily be brought behind the aperture without removing the instrument from the eye, so that the accommodation would more readily tend to relax in the estimation of hypermetropia, it would be a decided improvement, and one that would meet the approval of the profession.

With this object in view I have devised the instrument, or rather the improvement to Dr. E. G. Loring's instrument, as shown in the cut. This consists of a rectangular bar, connecting the ophthalmoscope with the handle, somewhat longer than the bar now in use; upon this bar is a slide with the lower part raised and roughened, so that it can be held steadily and firmly with the thumb and forefinger. This slide is made to pass freely up and down; passing upward from the slide is a flat rack of brass having on one side a series of small teeth, which act upon a cog-wheel attached to the disk containing the lenses. This cog-wheel motion is so set that when the slide is in the middle of the square bar, the aperture in the disk will be over the aperture in the ophthalmoscope.

It will readily be seen, then, that in the use of this ophthalmoscope, by simply pulling the slide downward, it will cause the disk to rotate to the right, thus bringing

the convex glasses successively behind the aperture; or by pushing the slide upward the concave glasses will be successively placed behind the aperture.

The small quadrant that contains the convex and concave glasses of 16 and .05 D is fastened to the segmented cover of the back of the ophthalmoscope by the two small seams in the centre, and when this is to be used, to obtain the stronger glasses, it is simply necessary, if convex glasses are needed, to put the +16 D over the aperture, then push the slide up to the top of the bar, and as it is pulled downward the convex combinations will successively be placed before the aperture from +8 D to +23 D; the same action of the slide with the −16 D behind the aperature will make all the combinations between −9 D to −24 D; only pull the slide down to the lowest point first, and then push it up.

I am inclined to think that by the use of this attachmen to Dr. Loring's ophthalmoscope the examination of the fundus and the estimation of the errors of refraction will be much more exact and satisfactory, as by the ease and ability by which we can bring these successive glasses before the eye will allow the examiner's accommodation to become easily relaxed in the estimation of hypermetropia, and also to more readily select the weakest concave glass in the estimation of myopia.

This instrument has been made for me by the firm of E. Gayler & Co., 839 Broadway, and I feel satisfied it will be found perfect in every respect.

Since writing the above I have learned from Dr. E. G. Loring that a similar movement was used on an ophthalmoscope with a single disk several years ago, and reported in Graefe and Saemish's "Handbook of Ophthalmology," vol. iii., part i., p. 135; but as the movement seems to me, since I have used it, an improvement in the method of using the ophthalmoscope, I have determined to present it to the profession. I would also add that this rack-and-wheel motion is so arranged that it can be easily applied to the Loring ophthalmoscope now in use.

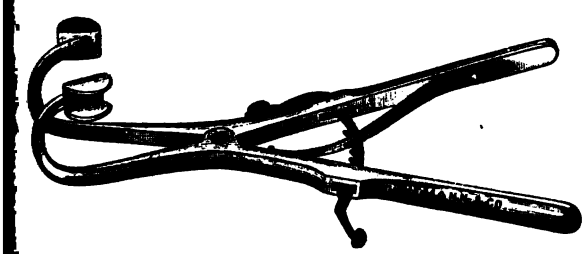
163 East Thirty-seventh Street.

A MODIFICATION OF O'DWYER'S GAG.

By CHARLES E. DENHARD, M.D.,

NEW YORK.

The following modification of O'Dwyer's gag I have devised to meet a serious objection to an otherwise excellent instrument. No matter how firmly the child's



head is held, the left shoulder is frequently forced against the arms of O'Dwyer's gag, thus displacing the instrument, to the physical discomfort of the physician's finger and possible laceration of the gums or the cheek of the little patient. In the modification, as will be seen in the accompanying cut, the arms of the lever are directed straight backward toward the ear, in place of being inclined down as in the original instrument. The assistant standing behind the patient can readily include the gag within his grasp while holding the head of the child. The catch also has been modified, the ring of the original being replaced by a dentated spring, allowing the jaws to be separated to the desired degree. The instrument has been used by myself and friend, Dr. Huber, in at least forty instances with entire satisfaction.

19 Madison Street.

Medical Items.

Contagious Diseases—Weekly Statement.—Report of cases and deaths from contagious diseases reported to the Sanitary Bureau, Health Department, for the week ending April 16, 1887:

	Cases.	Deaths.
Typhus fever	0	0
Typhoid fever	4	2
Scarlet fever	58	13
Cerebro-spinal meningitis	5	5
Measles	101	10
Diphtheria	102	41
Small-pox	6	5
Yellow fever	0	0

Some Patent Medicine Formulæ.—Dr. James S. Cooley, of Glen Cove, L. I., writes us: It is a matter of no special importance, but your types make sad work with the recipe for the sativa cure, in a late issue of The Medical Record. I do not suppose anyone will attempt to put it up, but I intended to write it plain enough for any compositor. I give you a copy below, which you will see, by comparing with the formula in The Record, is different in several respects.

Ext. Asiatic cannabis sativa	ʒ ij.
Ext. Asiatic halish sativa	ʒ iij.
Verbena hastata	3 ij.
Extract diosma	3 iij.
Pulv. cinchoni bark	ʒ ij.
Extract Cashgar leaves (blood root)	ʒ iij.
Inulin	3 j.

I have also the recipes for Le Grande's Arabian Catarrh Remedy, which is of two kinds, as follows:

Internal Remedy.

℞.	Extract Arabian calla root	ʒ jss.
	Comp. tinct. Arabian red lava flower	ʒ ij.
	Ferro citrate calcium	3 j.
	Bi-sulphate quineia	3 iv.
	Potassi iodide	3 j.
	Phospho salicylate	3 j.
	Glycerine	ʒ ij.
	Verium ferri, q. s. ad	O j.

M. One tablespoonful four times a day.

External Remedy, for Nasal Douche.

℞.	Pulv. Arabian sea grass	ʒ j.
	Pulv. Arabian kanke root	3 v.
	Chlorate quinia	3 j.
	Acetate silica	3 iij.
	Soda sulph	3 j.
	Magnesia sulph	3 j.
	Glycerine	ʒ ij.
	Aqua picis, q. s. ad	O j.

M. A tablespoonful in a quart of lukewarm water and used with a douche.

I have spelled the recipes as printed.

Simple Test for Wall-paper.—A simple and easily applied test for wall-papers has been devised by Mr. F. F. Grenstted. No apparatus is needed beyond an ordinary gas-jet, which is turned down to quite a pin-point, until the flame is wholly blue; when this has been done, a strip of the paper suspected to contain arsenic is cut one-sixteenth of an inch wide, and an inch or two long. Directly the edge of this paper is brought into contact with the outer edge of the gas-flame a gray coloration, due to arsenic, will be seen in the flame (test No. 1). The paper is burned a little, and the fumes that are given off will be found to have a strong, garlic-like odor, due to the vapor of arsenic acid (test No. 2). Take the paper

away from the flames and look at the charred end—the carbon will be colored a bronze-red; this is a copper reduced by the carbon (test No. 3); being now away from the flame in a fine state of division, the copper is slightly oxidized by the air, and on placing the charred end, a second time, not too far into the flame, the flame will now be colored green by copper (test No. 4). By this simple means it is possible to form an opinion, without apparatus and without leaving the room, as to whether any wall-paper contains arsenic, for copper arseniate is commonly used in preparing wall-papers. Tests one and two would be yielded by any paper containing arsenic in considerable quantities.—*British Medical Journal.*

A Ballad of Consistent Spelling.

There was once a young man who caught phthisis,
By being exposed to the brhisis;
So he—cold death to foil—
Took some cod-liver oil,
Which instantly brought on e-mhisis.

The Therapeutic Value of Mountain-climbing.—In the *New York Medical Journal* of February 26, 1887, Dr. L. Borkan, of Brooklyn, emphasizes anew the beneficial results obtainable from mountain-climbing. He says that pure air, such as is found in the mountains, is always the most active of disinfecting agents known. Thinly settled districts are much more healthful, other things being equal, than densely populated ones. Mountainous regions almost invariably belong to the former category. According to the author: "There are floating in the air numberless germs, many of them of a harmful nature, and it would seem possible that the injurious germs which, especially in large places, are received into the human organism, might be rendered innocuous by the oxygen of the air (and perhaps, also, by air-currents acting in a mechanical way), while in stagnant air—as, for example, in a badly ventilated apartment, where the exhalations from the lungs and skin are constantly accumulating—there is less disinfectant action because of the diminished quantity of oxygen. We seek to get rid as quickly as possible of the other excretory products, while, strangely enough, the same amount of zeal in disposing of the exhalations—that is, the excretions—of the lungs and skin is comparatively seldom exhibited." Dr. Borkan also maintains that, "the best inhalation apparatus, baths, and medicaments are of but temporary value if no compensation is made for the loss of vitality and of muscular tone, especially that of the heart and vessels; if the blood stasis in the glands and other organs does not yield to an increased flow of blood in the arteries and veins; if the thinned blood does not become thicker and more rich in albumen; if the accumulating carbonic acid is not expelled by a more plentiful supply of oxygen; if the fat deposited in the body is not more rapidly oxidized; and if the kidneys are not made to act more efficiently. But all these effects are produced, according to Jacobi, Loomis, Veit, Oertel, and other authorities, more certainly and more generally by mountain-climbing than in any other way whatever. After several weeks spent in mountain excursions, the condition of the patient is radically changed for the better. There is an elasticity of the mental processes in place of the former hebetude; will, thought, and impulse seem to move on wings; the formerly dull senses are sharpened; the formerly half-closed eyes sparkle, and the flabby cheeks become fuller and rosy; the formerly prominent abdomen is reduced to more seemly dimensions, notwithstanding that food and drink are taken with greater relish, and the chest is expanded." The author appears to have at various times acted in the capacity of medical *cicerone* to parties of men and women seeking to improve their health by excursions into the mountains. He says that, "in organizing parties for mountain-climbing, it is necessary to have everything arranged and to attend to certain preliminary details. Regulations should be established as to the gradual increase in the extent of the daily ascents, the periods for rest, the choice of food, the permission to drink, the regulation of time for stool, the protection of the feet, legs, and nates against chafing and the formation of blisters, the protection of the neck, and, finally, the selection of the mountain up which the ascent is to be made; these are all points which require careful consideration. The European mountains, where there is a better climate, and, as a rule, better paths than are to be found in the mountains of America, are to be preferred. An exception is, however, to be made in favor of the Adirondacks and some other mountains in the Eastern States, which might answer as places for exercise for American youths in search of health."

An International Congress of Cremation is to be held at Milan in September, 1887. Among the honorary presidents are Sir Henry Thompson, of London, and Professor Moleschott, of Rome.

The Relationship of Urea to Certain Morbid States.—Dr. Oliver says (*British Medical Journal*): "That urea originates from the decomposition of blood-corpuscles, and not from the disintegration of food. In the liver, the red blood-cells are known to undergo disintegration; the blood of the hepatic vein is much poorer in blood-corpuscles than that of the portal vein. It is out of the destruction of these hæmocytes that we get, on the one hand, the coloring matter of the bile; on the other, urea; and later on, from the bile, the coloring matter of the urine. In phthisis pulmonalis, where the liver is fatty or amyloid change has begun, the cells are no longer capable of performing their function, and the discharge of urea falls, in spite of the fact that there is a marked rise of temperature, and the patient consumes a fairly large quantity of animal food, wine, etc. If the tissues were the source of urea, then this is just the disease in which urea ought to be found in excess. But during the early stage urea is subnormal in amount; when, later on, it is in excess, it is found that the red blood-cells are rapidly becoming destroyed and the patient becomes anæmic. In lead-poisoning the urine is deficient in urea—a deficiency which, irrespective of sex, becomes marked when the anæmia has become pronounced, and still more marked when albuminuria is present. In malignant disease urea is in excess as long as the cachexia is forming—*i.e.*, during the disintegration of the blood-corpuscles. When the cachexia is developed the elimination becomes deficient. In the following morbid conditions, in which the blood shows distinct alterations in regard to the number of its corpuscles—viz., anæmia, pernicious anæmia, chlorosis, leucæmia, and myxœdema—the urine is generally deficient in urea, unless there is a rapid destruction of blood-cells going on, when the urea will be found in excess. In diabetes mellitus the urea is in excess, while in diabetes insipidus it is generally below the normal. In Bright's disease the urea is usually deficient. Dr. Oliver regards the liver as the organ chiefly concerned in the formation of urea. The tissues in their oxidation or disintegration contribute but little, if any. Food is a source, but not to the extent hitherto believed. During the process of starvation the daily discharge of urea is not much below the normal—a circumstance explained not so much by the disintegration and disappearance of tissue as by the fact that the tissues still form blood-cells, from the dissolution of which comes the urea. In the early stages of fevers, before the temperature has risen, the urine is found to contain an excess of urea, due to the sudden engulfment and destruction of myriads of blood-corpuscles in the liver. As a proof that the hæmocytes are the source of urea, the author takes any case of anæmia or cachexia; and, unless these changes are in the course of formation, it is found that the daily discharge of urea is diminished."

A Congress of Greek Physicians was held in Athens, on April 3d and 4th, on the occasion of the semi-centennial of the founding of the Medical Society of Athens.

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Original Articles.

CONCERNING THE INFLUENCE OF SMALL QUANTITIES OF SODIUM, CALCIUM, AND POTASSIUM SALTS UPON THE HEART AND SKELETAL MUSCLES OF THE TORTOISE.

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IN the present paper we record experiments made with the heart and skeletal muscles of the tortoise. The experiments and the results arrived at, which we shall detail with regard to the ventricle of the tortoise, are similar to others already published dealing with the ventricle of the frog (*Rana temporaria*) and that of the eel (*Anguilla muræna*).

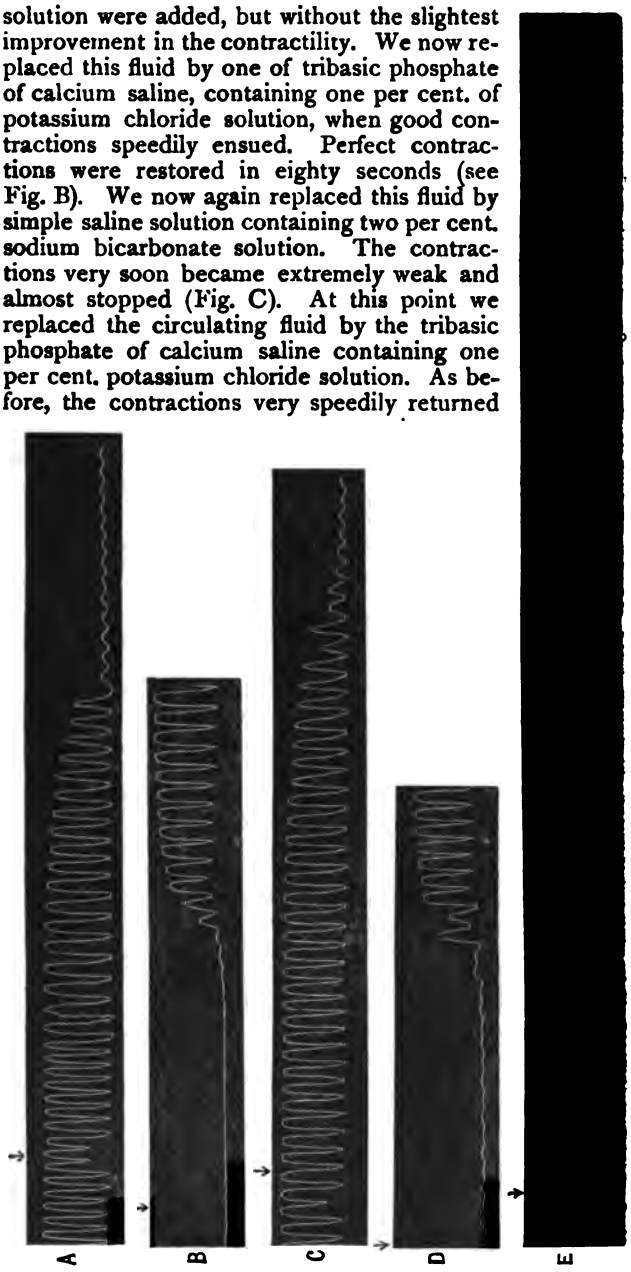
In our investigations on the tortoise's ventricle we employed a Roy's tonometer; we tied the heart in the auriculo-ventricular groove, and inserted the perfusion-cannula through the sinus into the ventricle. The aorta was also secured with a ligature. In our experiments we employed both the land-tortoise and the water-tortoise.

It is important to remember that the ventricle of the tortoise possesses coronary vessels, which, of course, assist in maintaining its nutrition, but this applies only to the outer portion of its thickness. The inner part of the tortoise's ventricle, like that of the eel and frog, is spongy, and is traversed by trabeculæ, and this, comprising the main thickness of the wall, is nourished by direct imbibition of the blood flowing through its cavity.

The experiments given below were made during the month of November, 1886; the temperature of the laboratory was, however, practically the same for all the experiments. The solutions employed were .6% saline solution; .6% saline solution saturated with tribasic calcium phosphate siphoned off after settling; also, one per cent. solutions of sodium bicarbonate and potassium chloride.

Commencing our experiments by circulating simple saline solution through the ventricle, we found, as with the frog and eel so with the tortoise, that such a fluid is incapable of maintaining contractility. The addition of one cubic centimetre of sodium bicarbonate solution, or of potassium chloride solution, or a combination of these solutions, in each hundred did not enable the saline solution to sustain contractility. When substitution of saline solution by tribasic phosphate of lime saline is effected, the contractility is speedily restored. This solution, however, not only restores good contractions, but also broadens the trace, rounds its top, and delays diastolic dilatation, and so brings about fusion of the beats. The addition of one or two per cent. of potassium chloride solution, however, quite obviates these "lime effects," so that we find tribasic phosphate of calcium saline with one per cent. of potassium chloride solution constitutes an excellent circulating fluid which is able to sustain natural contractions.

On November 18th we commenced an experiment by circulating phosphate of lime saline with one per cent. potassium chloride solution. This we replaced by simple saline solution, and in two minutes the trace became very weak, the record only giving a slight wavy line (see Fig. A). Two cubic centimetres of sodium bicarbonate solution to the hundred cubic centimetres of saline solution were added, but without the slightest improvement in the contractility. We now replaced this fluid by one of tribasic phosphate of calcium saline, containing one per cent. of potassium chloride solution, when good contractions speedily ensued. Perfect contractions were restored in eighty seconds (see Fig. B). We now again replaced this fluid by simple saline solution containing two per cent. sodium bicarbonate solution. The contractions very soon became extremely weak and almost stopped (Fig. C). At this point we replaced the circulating fluid by the tribasic phosphate of calcium saline containing one per cent. potassium chloride solution. As before, the contractions very speedily returned



EXPLANATION OF FIGURES.

A, Shows the effect of substitution of six per cent. saline solution for phosphate of lime solution (saline solution saturated with tribasic phosphate of lime) containing one per cent. of a one per cent. solution of potassium chloride. The arrow indicates the point at which the phosphate of calcium replaced the saline solution.

B, Shows the effect of replacing saline solution containing two per cent. of bicarbonate of sodium ($NaHCO_3$) one per cent. solution. The arrow indicates the point at which the change was affected in this and in succeeding changes.

C, Shows the effect of replacing phosphate of lime saline solution containing one per cent. of potassium chloride solution by saline solution containing two per cent. of a one per cent. solution of sodium bicarbonate.

D, Shows the effect of replacing saline with two per cent. of a one per cent. solution of bicarbonate of sodium by phosphate of calcium solution containing one per cent. of a one per cent. solution of potassium chloride.

E, Shows the effect of replacing the phosphate of lime saline containing one per cent. of a one per cent. solution of potassium chloride solution by saline solution containing one per cent. of a one per cent. potassium chloride solution, and the effect of again returning to phosphate of lime saline with one per cent. of a one per cent. potassium chloride solution.

(Fig. D), recovering their previous amplitude. The next change was the substituting for the circulating fluid one

consisting of simple saline containing one per cent. potassium chloride solution. The contractions immediately grew weaker, and eventually all but ceased, but were again restored to their normal size by a replacement of the saline and potassium chloride by the tribasic phosphate of calcium saline with one per cent. potassium chloride solution (Fig. E).

Subsequently we tested the effect of tribasic phosphate of calcium saline solution, and found that although it produced good contractions it broadened the trace, rounded its top, and delayed diastolic dilatation and induced fusion of the beats. All these effects were removed by adding one per cent. of potassium chloride solution, a normal beat resulting. After an hour and a half, and in spite of all the changes above narrated, the contractions of the ventricle were found to be only one-quarter weaker than at the commencement of the experiment.

We also tested the behavior of the auricle of the tortoise's heart, and found that it also contracted weakly when fed with saline solution, and that when its contractions had almost ceased—owing to the effect of the saline solution—the addition of a lime salt was able to restore and sustain a normal contraction.

Now, study of the tracings not only shows the marked effect produced by the lime salt in promoting contraction, and the contrary effect when lime is withheld, but it reveals the fact that these effects are produced with great rapidity. For instance, when phosphate of lime was withheld the contractions very rapidly weakened, and in from ninety to one hundred seconds had almost ceased. On restoring lime to the circulating fluid, a restitution of normal contractions took place in about the same time. Of even this short space of time, a part—although, of course, a very small part—must be consumed by the passage of the fluid along the afferent tube. The question then arises, How do lime salts exercise so rapid an influence upon the ventricle as to bring about such very material alteration in its contractions? It would appear that the circulating medium might affect the muscular tissue by coming to it through the coronary vessels, and so obtaining the most intimate action through the capillary circulation; but, on the other hand, the circulating fluid might come into close contact with the muscular tissue by filtration, diffusion, and osmosis through the endocardium. To investigate this question we performed an experiment similar to the above, but taking care to tie the ligature so as to include the heart-substance at the base of the aorta, and so effectually to exclude the possibility of coronary circulation. We found, however, that even when the cannula was passed well into the heart, and a ligature secured tightly in the auriculo-ventricular groove, that we obtained the same effects from circulating lime salts, and as rapidly as when the coronary circulation was presumably intact. It would then appear that the circulating fluid is able to rapidly permeate the endothelium covering the trabeculæ of the tortoise's ventricle, and so conveys to, or withdraws from, the muscular protoplasm lime and potash salts according to the composition of the circulating fluid. But the extreme rapidity with which lime and potash salts bring about changes in the characters of the contraction of the tortoise's ventricle may seem to preclude or throw doubt upon the explanation that these salts act by filtration and diffusion through the endocardium.

It might be suggested that these salts act through the nervous system, but their influence upon the heart is clearly of a different character from inhibition or its withdrawal, since a heart which has been inhibited by the vagus will still contract fully when excited by a stimulus applied to the muscular substance itself; but a heart arrested by a circulating fluid devoid of lime will not contract when plied by the most powerful direct stimulation. If it should turn out that calcium and potassium salts do exert their influence through the nervous system, it must be concluded that lime salts act upon the nervous mechanism of contraction, potassium salts upon that of dilatation.

Whether these salts influence the muscle directly by filtration, or indirectly through the nerves, they can exert their influence only in a very slight degree unless they act under considerable pressure, as when their solution is forced into the ventricular cavity and distends it by considerable lateral pressure. This question of the influence of pressure is illustrated in the following experiment: If the whole heart of a tortoise is placed in a fluid, and fixed by passing a pin through the aorta into a loaded cork, while the ventricle is suspended by means of a thread passed round the frenum at its apex, and secured to the lever of a recording apparatus suspended by a thin strand of india rubber, the movements of the lever show that the effects of the solutions of various salts are quite different from those which follow the circulation of similar solutions under pressure through the cavities of the heart.

The heart was treated as above and placed in 300 c.c. simple saline solution, and its contractions grew weaker, but only gradually. At the end of an hour and a half the contractions were reduced to about one-half their initial size. We then drew off the fluid and replaced it by an equal amount of saline solution saturated with tribasic phosphate of calcium. No improvement, however, in the size of the contraction took place; on the contrary, the contractions still grew weaker. We added 3 c.c. of the potassium chloride solution after half an hour's time, but without any perceptible change occurring in the contractions. The further addition of 3 c.c. bicarbonate of sodium solution did not check the steady weakening. So we see that, employed in this way, simple saline solution only very gradually weakens the heart's contractions, and that neither phosphate of lime, chloride of potassium, nor bicarbonate of sodium can remove this weakening or prevent the gradual increase of the weakness. When at the close of the above experiment the heart had almost stopped, we circulated through it tribasic phosphate of lime saline with one per cent. chloride of potassium solution, but failed to improve its contractions. The failure to obtain effects from potash and lime salts when the heart is suspended in their solutions might, we surmised, arise from a possible difference between the power of absorption, etc., of the endocardium, on the one hand, and the pericardium, on the other. To test this we repeated the above experiment with a heart divided longitudinally from apex to base, and from side to side. In this way the cavity of the heart was brought into direct contact with the solution in which the heart was immersed. We tested one-half of the ventricle. The initial contractions were very strong, but gradually decreased in force, and at the end of fifty minutes were decidedly weakened. At this time we replaced the saline solution by tribasic phosphate of lime saline in which was 1 c.c. chloride of potassium solution in the hundred, and an immediate improvement occurred, the contractions recovering completely. We then returned to saline solution, and at once the contractions weakened, and in ten minutes were reduced to half their initial size. We now replaced this fluid by tribasic phosphate of calcium saline containing two per cent. potassium chloride solution, with the effect of increasing the size of the contractions by one-fourth. We did not, however, fully restore the contraction to its original size. From these experiments we see that either through the endocardium or the cut surface of the muscle the salts in solution exercise slightly more influence than when they act mainly upon the pericardium, only so much solution acting upon the endocardium as could find its way inside the ventricle through the cut sinus and aorta. And, further, the effect upon the divided ventricle was much less than on the entire ventricle, provided the fluid in the last case is allowed to perfuse under pressure through a cannula; so that we conclude that to obtain the lime and potash effects these salts must be circulated through the heart under pressure, a view which tells in favor of the theory that the salts act directly upon the muscular substance by actual filtration through the endocardium.

In a previous communication[1] we have shown that saline solution, lime and potassium salts in solution, do not affect skeletal muscles in the same way in which they influence the substance of the heart.

When placed in saline solution the frog's sartorius very slowly loses its contractility; the contractions, although weakened, do not cease for an hour or an hour and a half after immersion. When the contractions have grown weak, if the saline solution is changed for one containing a lime salt, either no improvement in the contractions takes place or only a very slight one which is also only transient. The addition of the lime salt does not prolong the contraction nor does it delay relaxation. Since the publication of the above facts concerning the sartorius muscle we have extended our observations; we have employed the gastrocnemius muscle, and we find that it gives precisely the same results when placed in solutions of various composition as the sartorius.

This well-substantiated difference between skeletal and heart-muscle is in some measure explained, we believe, by some of the experiments recorded in this paper.

If the heart of the frog or of the tortoise is suspended in saline solution, and the contractions are recorded without circulating a fluid through the cavities, the ventricle behaves just like a skeletal muscle, and the contractions very slowly become weak—in the case of the tortoise's heart persisting for many hours. The addition of a lime salt does not improve the contractions, nor does it alter their character, *e.g.*, as by delaying dilatation, etc. If the tortoise's ventricle is divided so that its cavity is directly exposed to the action of the fluid in which it is suspended, much the same happens, save that the addition of a lime salt to the fluid will slightly improve the contractions, which had been weakened by saline solution. In fact, it appears that the rapid effects of saline solution and the characteristic effects of the solutions of lime salts or potash salts are only elicited when the solutions circulate through the ventricle, and are induced by lateral pressure to traverse the delicate endothelium, and so infiltrate the spongy muscular tissue itself.

And thus we conclude that the differences between the behavior of skeletal and cardiac muscle probably depends upon the way in which the testing fluid is applied; for if either is suspended in the fluid their behavior corresponds, and lime cannot in either case restore weakened or arrested contractility.

We next investigated the behavior of skeletal muscle when the test fluids were circulated through the muscle by traversing its capillaries. And we found that the same results were arrived at for cardiac and skeletal muscle, provided the test fluids were circulated in the one case through the heart-cavities, and in the other through the capillaries of the muscle.

We inserted a cannula into the descending aorta of a tortoise, and, having tied it in, introduced the test fluid while we secured the outflow by another cannula tied in the vein. The contractility was tested by faradization, a single Daniell's element being used and the coil kept constantly at 6. It took a considerable time to wash out the blood from the vessels; indeed, the fluid which flowed from the veins remained tinged with blood for an hour and twenty minutes, and so long as this was the case the contractility of the muscles remained unimpaired. After another ten minutes the outflow was quite colorless, and the contractility was much lessened. The coil was run up to 4 without increasing the amount of the contraction. In an hour and forty minutes the muscles had almost lost their contractility; we then caused saline solution saturated with tribasic phosphate of lime to traverse the vessels, and in four minutes found contractility much improved. In ten minutes this improvement was very marked, and we again returned to a circulating fluid of simple saline solution. In four minutes after this, contractility had become greatly impaired, but on resuming the supply of calcium phosphate saline the contractility returned in two minutes. We then returned to saline solution, and in three minutes contractility disappeared; so we again supplied the phosphate of calcium saline, and the contractility greatly improved in eight minutes. We repeated these changes of saline to phosphate of calcium saline, and back again to saline, on three more occasions, and each time the saline medium checked contractility, while a return to phosphate of calcium saline solution always produced excellent contractions. These observations were verified by subsequent experiments, the same results coming out.

We also found, on further experiments, that when 1 c.c. of a ten per cent. solution of calcium chloride was added to the 100 c.c. of calcium phosphate saline solution, the restoration of contractility of the muscle was more rapid and more complete.

We see from the above facts that the power a lime salt possesses of restoring the contractility of skeletal muscles, which had ceased, by the circulation of saline solution through the vessels, depends upon the way in which the lime salt is applied to the muscle. If it is conveyed through its capillary vessels, a mode quite analogous to circulating a fluid through the cavities of the heart, the lime salt speedily restores contractility when that has been suspended by a saline solution circulation. We see, also, when saline solution is circulated through a muscle in this way, that the loss of that muscle's contractility is very rapid, and is as speedy as is the suspension of contractility in the heart-muscle when saline circulates through the heart-cavities. Therefore it appears that lime salts exert the same influence on the contractility of skeletal as on cardiac muscle.

There is yet another point which claims our attention. In our previous experiments, recorded in the *Journal of Physiology* for 1887, we found that if the sartorius muscle of the frog is immersed in saline solution it slowly loses its contractility.

Contractions, although weak, may persist for an hour and a half; but after this time has elapsed even the addition of phosphate of lime or chloride of lime in large quantities fails to restore or improve contractility. This inability to restore contractions cannot, however, be due to non-absorption of lime, since the lime does exercise a decided effect in another direction, namely, by removing contraction remainder. We think that the reason why the lime salts do not under these circumstances produce improvement in the contraction is, that the rate with which the contractility declines is very slow, so that the muscle during this time is permanently damaged, and so is incapable of resuscitation. This view seems to be rendered probable by the following facts: If the heart be fed with saline and kept non-contractile for an hour, the addition of lime salts fails to restore contractility. And, again, it has been pointed out above that the tortoise's heart, if suspended in saline until all contractility ceases, will not regain its contractility even when phosphate of calcium saline is circulated through it.

Reviewing the results of the experiments above described, we think the following facts and inferences deserve especial attention: Saline solution when circulated through muscle in such a way as rapidly to come into intimate contact with the muscular protoplasm induces lessening or loss of contractility, and does so with great rapidity. This action is exerted alike upon cardiac and skeletal muscles.

Lime and potash salts, also, when brought into like intimate relation with muscular protoplasm possess a power of affecting muscular contractility. Lime salts speedily restore contractions when such have been stopped by saline solution, and this they do alike to cardiac and skeletal muscles.

These facts, as we have shown, hold good for the heart-muscle of the frog, the eel, and the tortoise, and for the skeletal muscles of the tortoise, and probably have a very much wider application.

[1] Journal of Physiology, 1887.

THE BEST TESTS FOR ALBUMIN, AND SOME POINTS RELATIVE TO URINARY EXAMINATIONS.[1]

By HENRY B. MILLARD, M.D., A.M., Etc.,
NEW YORK.

That neither the presence of albumin in the urine nor its absence of itself demonstrates disease or healthfulness of the kidneys, we all know. In an advanced state of cirrhosis, albumin may be temporarily absent, while it may exist in inconsequent functional derangements or as the result of simple glomerulitis without any diffuse nephritis. I think, nevertheless, the existence or non-existence, if either of these conditions be persistent, a circumstance of greater weight, in the majority of cases, than any other except such conditions as the microscope shows, in aiding us to determine whether or not the case be one of nephritis.

The general practitioner has few examinations to make on which depend more grave issues than the apparently simple one of testing for albumin. Yet how imperfectly and inaccurately this examination is often made, and how uncertain its conclusions! There is no danger of too much being written upon this theme, homely even if it seem in comparison with brilliant novelties or apparently more intricate subjects in medical practice, nor of the matter being over-studied. With a large experience in these examinations, I sometimes find it difficult, until I have examined several specimens, to decide whether urine contains serum-albumin. I do not propose to consider here the chemistry of the protein bodies met with in the urine, but to refer only to the various substances that may be mistaken for albumin and the readiest way of discriminating the latter. The only tests I think it essential to consider here are:

Nitric acid—Dr. Roberts' modification of the nitric-acid test by the sulphate of magnesia, and which for convenience I will speak of as the *nitric-magnesian test*—and *heat.*

Among the most difficult things to distinguish from albumin are mucin and certain elements always found in urine where there is leucorrhœa, even mild cystitis, cervico-metritis, gleet, etc. Such urine is commonly thought to contain mucus, but according to Méhu[2] mucus is seldom, if ever, found in the urine. Epithelia from the various regions, with their detritus, some partially and some wholly disintegrated or dissolved, leucocytes, pus-corpuscles, pyin, and, where there is much inflammation, the serum of the liquor puris, are contained in the urine where there is cystitis, vaginitis, etc. The broken-down and dissolved epithelia contain many protein elements, and these, with the other substances I have just mentioned, give many of the reactions of albumin. According to Méhu, the cloudy sediment which occurs so often in the urine does not contain vesical mucus, as this is not a special secretion, and the term "muco-pus," etc., should disappear. Mucin, however, is definite and easy to characterize; it is invisible, viscous, making the urine foamy, being precipitated by acetic acid, and does not redissolve in an excess of it.

"The sticky substance in chronic cystitis is formed from the decomposition of the leucocytes, etc., by the urea and the carbonate of ammonia." Urines such as these produce a slight cloudiness, due to the precipitation of anatomical elements held in solution, being more abundant in proportion as these elements have been retained a long time in the urine, and as the latter is less dense and less acid, becoming more ammoniacal. Heat, aided by weak acetic acid, produces still more cloudiness, but no albuminous flakes. Tanret's test gives a cloudiness and sometimes a well-marked turbidity without albumin, albuminose, or mucin being present. It is in this very common class of cases that the observer is too inclined to conclude that the urine is "loaded with peptones" (Méhu, *loc. cit.*). Although many protein bodies exist in the urine the existence of peptones is much less common than is usually supposed. The variety of proteids in the blood and urine is very great, and between the serum-albumin and the peptone of the urine there are numerous protein substances, ill-defined; these are nearly all precipitated by Tanret's test, alcohol or heat causing them to disappear. I have made many experiments relative to this subject, some of them showing the liberation, from beef powders which had been boiled, of protein substances, but no albumin. A part of these experiments are given in an article in The Medical Record of April 4, 1885.

The substances, then, most likely to be mistaken for serum-albumin are, first, the various protein bodies, peptones, and the alkaloids; these, when Tanret's test has been employed, easily disappear on the application of heat or alcohol; second, mucin, pyin, the various dissolved albuminous substances found in inflammatory states of various portions of the genito-urinary tract, and last, the glutinous substance formed by decomposition. With these two last, nitric acid, which is so satisfactory in other respects, becomes uncertain. Nevertheless, an explanation of the doubtful reaction is always possible, and this brings me to the consideration of two important points:

First, *the careful preparation of the urine for examination,* and second, *the best tests.* In many cases practitioners do not take requisite pains to enable them to determine with certainty whether or not renal albuminuria exists, sometimes from not realizing the importance of certain details, and sometimes from lack of time or patience. In cases of slight albuminuria, as where, for instance, there is not more than one one-hundredth of one per cent. of albumin, and in cases where pus, mucin, and the various substances I have described occur, it is sometimes a matter of great difficulty to determine whether or not there is renal albuminuria. I have several times been called in consultation in cases where renal symptoms apparently existed, as anasarca, etc., which symptoms, with the supposed existence of albumin in the urine, had led to the diagnosis of Bright's disease, but where the kidneys were perfectly healthy, the appearance of albumin in some cases being produced by the reaction of the urates with nitric acid, in others, by various other causes. The necessary precautions, tests, etc., are, however, easily practicable, though time must not be too much economized. I think physicians should take more pains to impress upon patients the necessity of observing certain details in sending the urine. I have known it sent in hair-oil bottles, sometimes decomposed from being collected from vessels not perfectly clean, and sometimes, from standing too long, perhaps, full of bacteria; and in examining the urine of the male I have found epithelia from the vagina, showing a communality in a certain article of this world's goods quite in accordance with socialistic doctrines, but inconvenient in urinary examinations. I have found it necessary to have a card like this printed:

IMPORTANT DIRECTIONS FOR SENDING SPECIMENS OF URINE.

The vessel in which urine is passed must be perfectly clean.
A new bottle should be used.
Send a ounce bottle urine passed.

Put your name on wrapper, and date of day on which urine is passed.

Patients should be made to understand that the examination of the urine for albumin is not always a simple affair, and cannot be properly done without entailing upon them some expense. A gentleman from Chicago who lately consulted me told me that a physician of that city, of recognized ability and a professor in one of the best medical colleges there, made him a charge of only one dollar for each consultation and urinary examination. Physicians in large cities, if their time be much

[1] Read before the Section on Theory and Practice of Medicine of the New York Academy of Medicine, April 19, 1887.
[2] De la non-existence du mucus de l'urine, Bull. gén. de Thérapeutique, Août 1886.

occupied, must do their patients scant justice at such rates, unless they are so fortunate as not to be dependent on their professional fees for a livelihood. I may say that in this instance an entirely inaccurate diagnosis had been made. When I require the urine of women for examination, I direct *thorough* syringing of the vagina to be resorted to before the urine is passed; traces of albumin can be found in the urine of every woman who suffers much from leucorrhœa or cervico-metritis. Aside from the examination for albumin, it is no small comfort, in case a microscopic examination be made, to find the specimen free from vaginal or vesical epithelia, etc. As a rule, the urine requires to be clarified; it is the exception when, even after standing for a considerable time, it is so clear that some of the elements, particularly mucin, will not be afloat in it, sometimes greatly embarrassing the work of testing. Unless very turbid from other causes than the urates, which disappear on warming the urine, I think filtration through a double thickness of Swedish filtering-paper will render it sufficiently clear. I find that with my own test (phenic and acetic acid and potash) urine that has been passed through the gray French filtering-paper gives a decided albuminous reaction, due probably to the presence of a minute quantity of vegetable albumin, and if with this test, it may be with others. When, however, the urine cannot be cleared by simple filtration, it may be boiled with a fourth part of liquor potassæ and then filtered. There are other methods, as with the magnesian fluid; but the fewer recommended in this paper the better, and it is rare that one of the first two does not prove sufficient. Without clarification, clean tubes, and a good light, the urine cannot be properly tested for albumin, or the fine and sometimes almost invisible sharp line seen, or almost imperceptible cloudiness from heat or Tanret's test recognized, which we expect to find when the urine contains only one-fiftieth or one one-hundreth of one per cent. of albumin.

THE BEST TESTS.—I mean by these such as combine the merits of accuracy and facility of employment by the general practitioner. I will first consider the

Nitric-acid test.—The Clinical Society of London last July reported that it found this, all things considered, the best test, that is, the most reliable and delicate, and with proper precautions it is, in many cases, highly satisfactory. To employ this another precaution besides clarification is often necessary; however clear the urine, if urates exist in excess, they form with this reagent a turbid white zone above and in contact with it; this is not usually very dense in appearance, the part next the acid being, as a rule, most dense, the upper portion less so; sometimes, indeed, when with an excess of urates albumin is present, this latter will be seen as a sharp line below the zone produced by the urates, but the discrimination is not always easy. And permit me here to say that if, in referring to methods of using reagents, etc., I state some facts which should be familiar to every tyro in medical practice, it is not because I impugn mentally the high intelligence of the audience I have the honor of addressing, but because these facts form a natural and indispensable part of the context. When there is reason to suspect the existence of an excess of urates these may be dissolved before testing by letting the test-tube stand in hot water, not boiling, as this coagulates albumin, but having a temperature somewhat under 140° F., albumin coagulating at and above this figure. There is now no danger of this zone being formed, and a drachm or so of the acid being placed at the bottom of the tube, which is better for having a diameter of as much as three-fourths of an inch, the urine should be allowed to trickle slowly down upon it. If much albumin be present, it is quickly coagulated by the contact, and a white, lardaceous layer is at once formed. We will suppose that all the directions I have given have been followed, the test-tube is held before a clear, bright light, a book or some dark object is held before the layer of acid, but no sharp line appears, nor white layer nor cloud of any kind. We must by no means conclude that albumin is not there, but allow the urine to stand five, or even ten or fifteen, minutes; then, sometimes, we shall find a thin, clear, sharp line visible only upon careful scrutiny, and perhaps underneath it a colored zone produced variously by uric acid, biliary acids, iodine should the patient be taking iodide of potassium, etc., and above the albuminous ring, sometimes half way between it and the surface of the urine, an irregular ring of less density, probably mucin. If the urine be allowed to cool we may find four distinct zones; first, the orange-colored one, then one albuminous, the next formed by the urates, the upper one mucin. Dr. (now Sir William) Roberts says the mucin zone can be recognized by twirling the test-tube, when it will become diffused, while the albuminous layer will not. "Traces of mucin in a state of solution," says this author, "seem to be present in all urines, healthy and morbid, and this occasions more frequent embarrassment than any other substance." Nevertheless, nitric acid is troublesome, as giving a reaction when mucin or the elements in question are present. Still, according to Roberts, it is easily distinguished from albumin by being precipitated by weak, but not by strong, nitric acid and by forming a zone at some distance *above* the acid. When, however, mucin and the substances which pass for it are present in abundance, the discrimination by nitric acid is by no means simple. This reagent has the merit of not precipitating peptones or protein bodies. It produces a precipitate when resinous oils, as copaiba, cubebs, etc., are being taken, but this readily disappears on adding alcohol.

The nitric-magnesian test, as I shall term it for the sake of brevity, is a modification by Dr. Roberts of the test by pure nitric acid, and is described in an article by him in the *Medical Chronicle*, October, 1884. It is prepared by mixing one part of pure nitric acid with five parts of a saturated solution of the sulphate of magnesia, and filtering. The principal advantages claimed for it by Dr. Roberts are that it does not stain nor soil the fingers, that it does not show a coloration with iodine, and, most important of all, that it is a more delicate test than pure nitric acid. It is used the same way as the latter, a drachm being poured into the bottom of the test-tube, holding this nearly horizontal so that the two liquids do not commingle, since if they do the mucin and albumin are precipitated together, but otherwise are precipitated at different points.

I have used this reagent with chemically pure blood-albumin, made for me by Merck, of Darmstadt, and with a large number of specimens of urine, acid, alkaline, containing mucin, pus, the *débris* and dissolved elements found in inflammatory conditions of the vagina, bladder, etc., first, of course, freeing as thoroughly as possible the urine from these substances, and do not, from my own experience at least, hesitate to pronounce it, as regards delicacy, accuracy, and facility of employment, the most satisfactory test I have yet used. I have been able to discover by it albumin in the urine of chromic interstitial nephritis when no other test but Tanret's, or the equally sensitive one introduced by me of phenic and acetic acid and potash, would show it, and in the clarified urine of the male where the urine was remarkably clear and there was no inflammation, when it was not shown by nitric acid. In an extensive series of experiments made by me to determine the delicacy of certain tests, many of which were published in THE MEDICAL RECORD, in 1885, I found that nitric acid would not show more than one part of albumin in 100,000, that is, 0.163 grain to the litre, and I find that the nitric-magnesian test will show a smaller proportion.

It is not of much importance, everything else considered, if the amount of albumin do not exceed one part in 10,000, that is, one one-hundredth of one per cent. (equal to 1.63 grain to the litre). If urine containing about one-tenth of one per cent. of albumin be diluted

with distilled water, so that it will contain, say, one one-hundredth of one per cent., the nitric-magnesian test would usually be found to form a layer not more than one-half as thick as that produced by nitric acid, but much more compact and dense. Now, the former test possesses this very great advantage: that it condenses more thoroughly the albumin than does the nitric acid. It often happens that the zone produced by nitric acid will be light and fluffy, mucin or the substance I have so often referred to being directly in contact with it in considerable quantity, while that produced by the nitric acid and magnesian test would be condensed, compact, lardaceous, and clearly and sharply defined, the precipitate produced by the obnoxious elements being distinctly separated from it. This advantage I find in nearly every instance; a double advantage, as it not only shows clearly the presence of albumin, but makes it possible to determine with sufficient approximation the percentage of albumin contained in the urine. If every precaution be taken, Hofmann and Ultzmann's rule—that of a sharp, clear layer of albumin every three millimetres (about one-tenth of an inch), in thickness, indicates one-tenth of one per cent. of albumin—is sufficiently exact for clinical purposes. I have repeatedly verified the excellence and convenience of this rule; the nitric acid, however, often condenses the albumin so imperfectly that an albuminous zone, which from its imperfect concentration has apparently a thickness of two or three lines, does not really represent more than *one* line. The nitric-magnesian fluid produces such a compact layer that it can be taken with more confidence as a basis for the estimate of the quantity of albumin. In regard once more to the delicacy of this test, I have found it to show the presence of albumin after diluting it to a point where nitric acid ceased to show it, and have occasionally found it to show albumin when even Tanret's test did not. From my experiments I believe it to be easily a third more sensitive than nitric acid; that is, if this last test would show one part in 100,000, the test in question would show one part in 150,000. I must not, however, omit to state that this test cannot be used with urine that has been clarified with liquor potassæ, as a dense precipitate is at once formed, owing to chemical decomposition. The urine can, however, be sufficiently cleared by thorough filtration.

Other experimenters may find some, though I think not many, objections to this test that I have not. Yet who is there that has not, in a long medical experience, seen most promising, nay, apparently unassailable discoveries, disclose vulnerable points to the uncompromising test of continued experience?

Happy is he who does not in time find the value of his discoveries in our benign art vanish like the actors in the comedy of the "Tempest," "melted into air, into thin air," leaving "not a rack behind."

Heat, although somewhat more sensitive than nitric acid, I regard as one of the most cumbrous of the important tests. It shows phosphates, which are, of course, easily dissolved by acids; but if albumin exist only in minute quantity, this is liable to be so diffused by the addition of anything as to render it invisible. Then if the urine be too acid or too alkaline, it must be made less so, and it is sometimes very troublesome to add exactly the proper quantity of acid or alkali. There is also this very great disadvantage, that when the necessity exists for adding acetic acid, even if the urine have been thoroughly clarified, this acid produces a reaction due to the precipitation of anatomical elements in solution when the urine contains mucin, vaginal, or other epithelia, etc. The turbidity, though often slight, is sometimes very considerable, in either case it being impossible to employ heat with entire, if with any, satisfaction. Without any of the troublesome anatomical elements I have mentioned being present, acetic acid may produce turbidity with peptones or other protein bodies. I have found this to be the case with numerous artificial peptones, and with urines which gave the reaction of peptones with picric acid; the cloudiness thus produced disappearing by heat. Citric acid is preferable as an acidifying agent, since it does not give reactions with peptone, though it does with mucin, dissolved epithelia, etc. Dr. Roberts claims that heat can be made to show one part of albumin in two hundred and fifty thousand parts of urine, but I have not been able to recognize, after much experimentation, that it shows more than one part in somewhat more than one hundred thousand. I will sum up with reference to this test by saying that, though it is often a sensitive and excellent one, there are circumstances which sometimes render it unavailable, and at best it requires more work and precautions than the nitric-acid or nitric-magnesian test.

There have appeared within a year or two several articles in medical journals on what might be termed *ready methods of discovering casts.* How with the greatest facility to find casts as well as renal and pelvic epithelia, and how to find them at all, if they exist in very limited numbers, like Virgil's shipwrecked mariners,

> . . . "rari natantes in gurgite vasto,"

is certainly a matter worthy of consideration. If casts and renal epithelia be numerous, the problem solves itself; but there are many cases, especially of cirrhotic kidney, where the specific gravity of the urine is low, in which casts and renal epithelia will sometimes be temporarily absent, and when present, exist in such small numbers as to require much time and patience to determine whether they exist or not. These bodies will be often held in suspension in the light cloud of mucin which is formed in nearly all healthy, or comparatively healthy, urine, and are sometimes also prevented from forming a deposit by the bacteria which agitate the urine, so that it will often happen that in ten or twelve ounces of clear urine of low specific gravity it is very difficult to obtain much deposit. The plan I formerly pursued was, in cases where the sediment was scanty, as in polyuria where the specific gravity was very low, to add to the urine about ten per cent. of a one-half of one per cent. solution of chromic acid, this effectually preventing decomposition or the development of organic life; then mixing, after the urine had stood a considerable time, half a drachm or so from the bottom of the beaker with a little glycerine, and letting the watery portions evaporate, the glycerine would hold everything of a sedimentary nature. This method is satisfactory enough; but a great deal of time is required. I am indebted to Méhu for a method of obtaining with facility, *en masse*, all the organic and inorganic matter in the urine, and this process I have come to consider almost indispensable. I believe I can, however, best give his method by translating his own words.

"The acetic-acid solution of the iodide of mercury and potash (Tanret's test) facilitates in an eminent degree the reunion of urinary sediments, partly by combining the anatomical elements in suspension, and partly by rendering inert the bacteria and various vibriones which prevent a deposit of anatomical elements. In many healthy or pathological urines it happens, indeed, that the sediment remains in suspension, like a cloud, in the liquid mass. In order to examine this by the microscope it becomes necessary to withdraw a portion of this cloud by means of a pipette introduced into the floating mass, this mode of manipulation, however, presenting many inconveniences. To obviate this, it is only necessary to add to the urine two or three per cent. of its volume of the iodide of mercury and potash, to agitate the liquid, and to let it rest. The uric acid mingles with the sediment. When the urine is albuminous or loaded with peptones, only from a drop to a few drops need be added to produce the desired effect, too large a quantity of the reagent occasioning a too voluminous deposit" ("Sur la Recherche de l'Albuminose ou Peptone," *Annales de Maladies des Organes Génito-Urinaires*, May, 1884).

As there is "no royal road to learning," so there is

none to the discovery of casts and renal epithelia under certain circumstances; the method of Méhu is without objection, and concentrates in a short time into a small compass everything in the urine needing recognition. Still, even with the deposit thus concentrated, it is necessary in many cases to "put up" several drops, and to employ long, laborious, and patient research before being able to arrive at an assurance of the presence or absence of the suspected bodies.

THE PRACTICAL VALUE OF OUR PRESENT METHODS OF TREATING THE UPPER AIR-PASSAGES.[1]

By F. H. BOSWORTH, M.D.,

NEW YORK.

It is now thirty-three years since Garcia, of London, demonstrated the feasibility of examining the interior of the larynx during life, followed by Czermak, of Pesth, who, making practical adaptation of Garcia's teaching, presented to the medical profession a new method of treating disease, and thus inaugurated a new specialty. It seems eminently fitting that, at the present time, when our specialty occupies so large a share of public and professional attention, when new and important observations crowd one upon another so rapidly, and the results of treatment are so much more flattering in their success than ever before, we should pause for an instant (take an account of stock, as it were), to examine the by-technique which has built itself up around our practice, and put it to the test of experience, indorsing all that is good and rejecting that which is bad.

The early days of our specialty were days of invention, and so rapidly did the number of appliances and ingenious devices for treating diseases accumulate in our hands that the impression grew that we treated disease by machinery. Nor was this impression ill-founded, for so extensive and complicated has the mere mechanical features of our specialty become that the laryngologist's office has grown to be not unlike a machine-shop.

I long since began to ask myself the question, how much aid has all this machinery been in the successful treatment of disease? This is to largely be the subject of our discussion to-night.

The point of view which I take is, that when we knew little about the treatment of these diseases our machinery was very extensive. As our knowledge increased, the machinery rapidly diminished; and now that we finally obtain striking success in the management of the majority of the diseases of the upper air-passages, I think I may safely say that all the machinery necessary might be carried in a small hand-satchel.

In discussing special methods of topical applications, I will make a few remarks successively on the treatment of the larynx, lower pharynx, vault of the pharynx, and the nasal passages.

As regards topical applications to the larynx, in the early days of our specialty, brushes, sponges, probangs, syringes, sprays of various kinds, were made use of in the treatment of so-called chronic laryngitis, and their comparative merits were discussed with great seriousness. Whatever may have been their comparative value, a question of far greater importance is, did any of them ever do any good?

I think I am safe in saying that in the whole history of laryngology no case of so-called chronic laryngitis was ever cured by topical applications, whether made by brush, sponge, or spray. The more serious affections of the larynx, such as tumors, syphilis, cancer, tuberculosis, paralysis, etc., of course no one ever claimed to cure by topical agents.

I have already expressed my views with regard to chronic laryngitis, and will not repeat them here, but will content myself with simply saying that the condition called chronic laryngitis is merely symptomatic and secondary to disease of the nasal cavities in every case. The morbid condition is not an hyperæmia with hypersecretion, to be corrected by an astringent, but rather a perversion of the normal secretion of the part, due to the morbid lesion above.

Applications to the lower pharynx from time immemorial have been made by brushes, sponges, cotton pledgets, sprays, syringes, etc., for the purpose of relieving a supposed chronic pharyngitis. Various astringents have been applied with the idea of correcting hypersecretion. I have elsewhere tried to make plain the fact that the lower pharynx is in no sense a part of the air-tract, but is a part of the food-tract; is covered with hard pavement-epithelium with limited capacity for secretion; is rarely, if ever, involved in inflammatory process of the air-passages, and therefore local astringents, however applied, do not cure.

The vault of the pharynx, we have finally learned for the first time in Mackenzie's second volume on "Diseases of the Throat and Nose," is the seat of morbid changes which characterize what has been called in years past naso-pharyngeal catarrh. What these morbid changes are, however, neither Mackenzie nor any other writer has ever made clear to us, the truth being that there is no such disease as naso-pharyngeal catarrh in the sense of it being a catarrhal inflammation of the vault of the pharynx. This disease, which is supposed to consist essentially in an excessive secretion from the vault of the pharynx, due to a chronic inflammation of its lining membrane, is a myth. This excessive secretion is in reality diminished secretion. It is a normal secretion from a healthy membrane, but undergoing subsequent change as the result of disease in the part above. The indications for treatment are not astringents, but rather some method which reaches the cause or source of the disease which lies in the nasal cavities themselves. No local application by brush, sponge, or probang behind the palate to the vault of the pharynx, in the whole history of laryngology, ever cured or even mitigated the severity of this so-called naso-pharyngeal catarrh.

As regards such conditions in the vault of the pharynx as hypertrophy of the pharyngeal tonsil, acute or chronic inflammation, neoplasms, or other diseased conditions consisting in structural changes, no local agents are of any avail other than palliative, as the indications are clearly for surgical measures.

In the treatment of so-called nasal catarrh a vast amount of ingenuity has been exercised in devising methods of making topical applications to the whole membrane lining this cavity, and some extravagant claims have been made as to the superior success of certain measures above others, ignoring the question as to the amount of real benefit derived even if the applications do reach the whole cavity. We are confronted here at the outset with the question as to what is nasal catarrh, so called.

I again take the ground that the disease which has figured so extensively in our medical literature as nasal catarrh is not a hypersecretion, to be cured by the local application of astringents. Even if it were a hypersecretion, the whole list of astringents which are found in our pharmacopœia have been tried in vain. I have not time here to enter upon the discussion of this question of the true pathology of nasal catarrh, nor the right, as it is but a short time since I presented the subject to you in a paper read from this desk on "Deflections of the Nasal Septum." I took the ground then that essentially the symptoms of so-called nasal catarrh are due to those morbid conditions of the nasal mucous membrane which interfere with the great respiratory function of the nasal passages—namely, exosmosis of serum. And, furthermore, that the so-called catarrh of the pharynx, larynx, and trachea are merely secondary to this condition, and not diseases in themselves, being amenable only to

[1] Read before the New York Academy of Medicine, April 21, 1887.

treatment directed to the real seat of disease—viz., the nose. I say that douches and sprays have never yet cured cases of catarrhal inflammation in the upper air-passages. I do not mean by this to utterly condemn their use. They have their uses, undoubtedly. They are of very great assistance to us in the management of our cases, but if we depend alone upon the use of local applications, no matter what special astringent we use, or stimulant or alterative; no matter how elaborate our pumps and thickly plated our air-receivers; no matter how expensive and complicated our machinery, we will fail absolutely and utterly in giving that amount of relief which our patients are entitled to receive at our hands —namely, a complete and radical cure.

The nasal douche, first suggested by Weber, afterward appropriated by Thudichum, and improperly called Thudichum's douche, has occupied a prominent place among our therapeutical resources. Its advantages have been lauded, and its dangers have been insisted upon. Its advantages are that it is an excellent method of reaching the whole nasal cavity for cleansing and palliative purposes; radical good, it does none. Its dangers are vastly overestimated. I have never seen bad effects from its use.

Inhalations at one time filled a prominent place in our therapeutic resources. They have deservedly fallen into disuse, as it is very questionable whether they were ever of any permanent service. Sprays have always deservedly occupied the most prominent place among our therapeutic resources. Various forms have been suggested, and various methods of producing sprays have been in use, and what shall we say of these devices? Simply this: Sprays have been of great help to us as cleansing, as palliative remedies, and nothing more. Is there any special virtue in any one form of apparatus, or in any one form of spray? Unquestionably not. We frequently see in the columns of our journals some new invention, or new device, or new suggestion regarding the spray-tube, air-pump, air-receiver, which it is claimed possesses certain specified advantages over all others. The validity of these claims I should call in question. Compressed air, as a force for generating sprays, has been supposed to possess superior advantages. The moral effect on the patient undoubtedly is often very great. Its advantages over simpler apparatus I regard as nothing. I hold in my hand here a simple hand-ball spray, which is sold in the drug-stores for one dollar and a half. I think I am justified in saying that the spray produced by this little apparatus is as efficacious as any produced by the most elaborate and most beautiful and most expensive air-pump and receiver that can be made. In former days we paid higher prices for spray-producers with a double bulb, one of those absurd devices which, after its first introduction, it took us years to rid ourselves of. A far more vigorous spray, as you see, is produced with a single bulb, which gives the full pressure which can be exerted by the fingers, the double-bulb spray being projected by the contractile force of a thin India-rubber ball.

The treatment, then, of catarrhal affections of the upper air-tract, from my point of view, consists in the treatment of the nasal passages. And this involves the restoration of these passages to a normal condition by the removal of obstructing bone and cartilage, reducing hypertrophied membrane, and correcting hyperæmia or other morbid conditions; in other words, in the use of the snare, the saw, the knife, and the cautery. I shall speak of but one of these devices.

The cautery has figured very extensively for many years in our literature as a valuable method for reducing obstructing lesions in the nasal passages. Now, I think I am justified in claiming that the object to be accomplished by the use of the cautery is not the destruction of tissue. If you stop to think for a moment of what the anatomy of the nasal mucous membrane is, I think you will see the truth of my reasoning. The superficial layer of epithelium is superimposed upon a bed of connective tissue containing blood-vessels, nerves, and beneath that we have a large plexus of blood-vessels—the falsely called erectile tissue. In hypertrophy the thickening largely involves the connective-tissue structures which are found in the intra-venous spaces and above. The epithelial layer is not thickened. Now, it is idle to suppose that a superficial destruction of this membrane reduces hypertrophy. It would be not unlike lowering a house by taking off its roof. We certainly should destroy its usefulness as a dwelling. The essential condition in what we call hypertrophic rhinitis is chronic hyperæmia of the blood-vessels, with increased nutrition. A caustic applied on the superficial layer of the mucous membrane reduces the amount of blood-supply to the part, arrests hyperæmia, diminishes nutrition, and in this way restores healthy action.

This is accomplished in the following way: The mucous membrane in a state of hyperæmia is treated with a solution of cocaine, which, as I first pointed out three years ago, exercises a specific action in causing vigorous contraction of the unstriped muscular fibres found in the coats of the blood-vessels. The blood-vessels thus become emptied, and the membrane, rendered pale and anæmic, clings closely to the turbinated bone beneath. A mild caustic then applied to its surface coagulates and destroys the superficial tissues, creates a closely adherent slough which, lying upon that membrane, acts much as a film of collodion would—clings closely to it, holds it down, prevents the return of the blood to the part, reduces hyperæmia, reduces nutrition, and encourages thereby a healthy, nutritive process. That this is a more logical view, more rational, than the one which directs our therapeutic resources toward correction of hypersecretion and the opening of the passages, I think will be generally accepted, and that soon. Certainly in my own experience—and it has not been a small one—I have failed to reach any intelligent comprehension of these diseases on the old theory. But acting on this view of it, directing my therapeutic efforts in this manner, I find myself able, not only in a very large majority of cases to give a favorable prognosis, but to verify the justice of it.

Accepting this view of the action of caustics in the nose, it follows that, what I have many times before claimed, the simple methods, such as chromic acid, possess advantages over the cumbersome and expensive devices, called the galvano-cautery, which should be recognized by all. A crystal of chromic acid accomplishes all that the platinum-wire can possibly accomplish; accomplishes it in a better manner—it can be applied with far more accuracy, its action controlled with far more delicacy, and it also creates a more efficient slough. While the galvano-cautery, on the other hand, is a cumbersome, expensive, disappointing, troublesome device, and also is not unattended with danger.

It will be noticed that I have confined myself to the discussion of our methods of treating *catarrhal* inflammations of the upper air-passages. This, I take it, comprehends all diseases for which anyone will claim topical applications to be efficacious. The treatment of neoplasms, malignant and benign, syphilis and tuberculosis, paralysis, etc., of course does not properly belong to our subject to-night. Acute catarrhal inflammation I regard as merely a symptom of chronic. Most acute inflammations of mucous membranes nowadays are immediately eliminated by the local use of cocaine. My usual rule is, after the application of cocaine, by which the acute appearances are eliminated, to treat the chronic disease which underlies it.

I think I have gone sufficiently over the ground of our present methods. I may add one word, and keep within the limits of our subject to-night, regarding our elaborate methods of examination.

Soon after Czermak's publication Toboldt presented us with the laryngoscope. We still use it, as well as the elaborate modification by Sass. It presents a very im-

posing appearance in our office. I wish to say here that I do not believe Toboldt's laryngoscope or Sass' involve any optical principle in their construction. I regard them simply as a portentous arrangement of lenses in a metal cylinder, nor do they possess any special advantages as an illuminating apparatus over the head-mirror. Furthermore, as to head-mirrors, every young man twenty years ago who returned from Europe with a full outfit brought with him a five- or six-inch head-mirror mounted on a Schroetter head-band. I have here a small two and a half inch head-mirror mounted on a head-rest perhaps one-sixth the size of Schroetter's, which I think possesses every advantage over the large, cumbersome affair of former days. The use of laryngoscopes is largely a delusion. The lenses have little to do with it. A good light renders this little head-mirror here, or Toboldt's laryngoscope, a very powerful aid in a thorough examination. A poor light renders one as well as the other of little account. No possible arrangement of lenses increases the lighting power of any kind of light.

We thus come, at the close of my paper, if my conclusion is right, to this: Elaborate laryngoscopes, elaborate air-pumps, nickel-plated air-receivers, have been of but trifling service to us in the development of our specialty. I hold in my hand a little hand-satchel which I can almost put into my overcoat pocket, which holds apparatus quite as efficient as the most elaborate piece of machinery that is set up in any physician's office in the land. We have ceased to treat by machinery since we have commenced to treat our cases with success.

In former days it would seem almost that the stock-in-trade of an accomplished laryngologist consisted of a large display of nickel plate, with the ability to place a brush into the laryngeal cavity charged with such medicament as fancy might dictate. Now, however, what I think we most demand is a thorough knowledge of the anatomy, physiology, and pathology of the air-passages and their lining membrane, a trained eye to recognize morbid conditions, and a notable amount of manipulative dexterity sufficient to deal with these lesions. In other words, as Dr. Daly very aptly remarked at the Copenhagen Congress: "The sooner we cease to be throat doctors and become throat surgeons" the better will be our success in the management of diseases of the upper air passages.

EFFICIENCY OF MEDICAL TREATMENT OF THE DISEASES OF THE UPPER AIR-PASSAGES.[1]

By ANDREW H. SMITH, M.D.,

NEW YORK.

The question for discussion this evening, as I understand it, is substantially this: How far are the topical measures at present employed in the treatment of the diseases of the upper air-passages, excluding those of a surgical nature, efficient and worthy of confidence? The very fact that this subject is brought forward for discussion shows that doubt has arisen in the minds of some as to whether we are not, to some degree, in error in supposing that the means we are in the habit of employing in these cases do really favorably influence the local conditions.

For my own part, this doubt does not exist as regards acute and subacute affections. Hyperæmia the result of hyperæsthesia is, in my experience, greatly benefited by the local use of anodynes, and especially of a weak solution of carbolic acid. Hyperæmia with little or no hyperæsthesia calls for astringents. A sluggish capillary circulation is benefited by stimulant applications, and mild escharotics are valuable in promoting the healing of abrasions and ulcers.

How very often it happens that a cough which has resisted every kind of internal medication ceases at once when the larynx is touched with a mild silver solution. A slight abrasion of the epithelium which has kept up a constant irritation, is caused to heal at once, and more is effected by a single local application, than a week of internal treatment could accomplish.

The value of disinfectants, anodynes, and anæsthetics, applied to phthisical ulcers and malignant growths, needs scarcely to be alluded to.

But when it comes to the question of the efficiency of local treatment in old chronic cases, and especially in what is known in general parlance as chronic catarrh, I confess that the doubt already alluded to has fixed itself very firmly in my mind.

It was suggested in the first place by the clinical results obtained in dispensary and private practice by myself and by other practitioners, and in the second place by *a priori* considerations as to the difficulty of reaching the whole of the affected surface in the majority of cases, and the still greater difficulty of finding remedies that will remove the diseased conditions, even when the latter are accessible to local applications.

In looking over the last report of one of our large throat clinics, I find that of 1,773 cases treated during the year 1886, 1,351 were cases of non-specific chronic disease, or a little more than seventy-six per cent. In private practice the ratio would probably not be very different. Now, the number of operations undertaken for the relief of these 1,351 cases was 370, or, in other words, only a little more than twenty-seven per cent. of these cases were considered as calling for an operation, or likely to be benefited by one. It follows, therefore, that seventy-three per cent. of the chronic cases were treated mainly, if not wholly, by topical means, exclusive of surgical procedures.

I bring forward these figures in order to show that surgical treatment cannot be made to take the place of other local methods, and that, when surgery has done all that it can do, there still remain nearly three-fourths of the chronic throat and nose cases for the treatment of which we are dependent mostly upon medicaments applied to the diseased surfaces.

Now, the conditions we have to contend with in these cases are for the most part chronic inflammation and its results. We all know how difficult it is to cope satisfactorily with these conditions, occurring in mucous tissues, even when most accessible. The ophthalmologists find in chronic conjunctivitis the opprobrium of their art, the otologists are not seldom baffled by chronic otorrhœa, and chronic inflammation of the uterus affords the chief support of the gynecologist if its treatment adds nothing to his laurels.

And no one who is familiar with the subject will fail to observe that many patients with chronic throat and nose diseases attend for very long periods at the clinics, and eventually give up treatment without having attained anything like a permanent cure. The same is true, also, of private practice. We constantly see and hear of patients attending for a whole winter at the office of this or that throat specialist without being materially benefited, and it must be a pretty frequent experience of any one who works much in this department to find his best efforts in cases of this kind leading to no tangible result.

Under the most favorable conditions all we can do toward promoting the resolution of an inflammation is to assist the reparative efforts of nature. No medicament has been or will be discovered that, by its own action, will dissolve out fibrin effused into the tissues, contract dilated vessels to their normal calibre, or reduce hypertrophied glandular tissue to its natural bulk. These are vital functions, and if influenced at all by therapeutic agents it is only in the way of being modified, not supplanted, by them.

Thus a local stimulant may induce a greater flow of blood to a part, and so bring about a more rapid absorption, or a local sedative may soothe irritated nerve

[1] Read before the New York Academy of Medicine, April 21, 1887.

filaments, and thus lessen hyperæmia. In all these cases, however, there is a tendency to repair by the unaided forces of nature, and what art does is only to develop this tendency. But in cases of long standing it may well be doubted whether this reparative tendency continues to exist; whether abnormality has not come to be the normal condition. Nature makes no effort to restore cicatrical tissue to the condition of the structure it replaces; muscular or glandular elements which have once perished are not renewed; a broken bone badly united does not try to straighten itself. In all these cases the much-talked-of *vis medicatrix naturæ* seems to have "stepped down and out." And when once glandular and vascular and interstitial changes have taken place in a tissue, as the result of long-continued irritation or inflammation, and the structure has thoroughly adapted itself to the new order of things, it may well be questioned whether there remains any tendency toward repair, and whether a change impressed upon the structures from without may not take any other direction as well as that toward the original normal condition.

To illustrate my meaning, let us take an old case of naso-pharyngeal catarrh, the most common disease that the throat specialist, at least in America, is called upon to treat. Here we find the mucous membrane thickened and infiltrated, its vessels enlarged and tortuous, its glands hypertrophied and secreting an excess of mucus, to which vast numbers of leucocytes are added.

This hypersecretion is in keeping with the altered structure, and is as natural to it as the normal secretion is to the normal membrane. Now, what reason have we to suppose that there is an effort constantly going on here to revert to the normal condition, any more than that the cicatrix of a burn is constantly trying to convert itself into normal integument, or the degenerated kidney to evolve new glomeruli or to reopen obliterated vascular channels. I do not believe that such a tendency exists; on the contrary, I believe that the tendency is to a still wider departure from the original condition.

Now, under these circumstances, what rational indication is there for the selection of drugs for local application? How are we to know that this stimulant or that astringent, things that have no natural relation whatever to the structures in question, is going to set right what is wrong, and bring the part again into a healthy condition. It is a sheer assumption, having no ground in reason and, I firmly believe, no justification in experience.

But even if we suppose that such effects are attainable by the local application of remedies, the fact still remains that a large portion of the mucous surface which is drained through the naso-pharyngeal passages is practically inaccessible to such treatment. The membrane lining the frontal and maxillary tissues, and the ethmoidal and sphenoidal cells cannot be reached efficiently by any method of application we possess. Each of these cavities communicates with the nose by a single narrow opening which becomes still narrower whenever the lining membrane is engorged by hyperæmia or thickened by inflammation. These cavities are filled with air which opposes the entrance of anything more. It is true that the frontal and maxillary sinuses may sometimes be injected, but the practice is fraught with so much discomfort and danger that it is very seldom resorted to. Vapors, sprays, and powders are practically excluded from all these regions by the physical conditions above alluded to. So that even if we could correct the abnormal conditions of the portion of the mucous tract within our reach, we should still have the disease intrenched in these remote fastnesses and ready at any time to sally out and regain the territory which had been wrested from it.

But these are not all the difficulties we have to contend with in the topical treatment of the upper air-passages. The diseases located here are for the most part the result of the long-continued operation of causes which are seldom wholly removable. The task set before us is therefore not only to restore the parts to health, but to make them invulnerable. We are required to heal the burn while the hand is held in the fire. Until we know better the causes of these affections and can shield our patients more effectually from these causes, we must be prepared to meet with many disappointments in our efforts to afford relief. As already stated, I do not wish these remarks to be understood as applying to the whole field of the diseases of the upper air-passages, but only to certain chronic forms. Nor do I wish to discourage efforts to relieve even these. I simply wish to insist upon the recognition of certain difficulties and limitations which are inherent, and are not chargeable to faulty methods or want of skill. I wish to insist upon our being just toward ourselves and frank with the public. So long as we are unwilling to meet this question fairly, but seek to evade it by the invention of new methods and new appliances, so long we shall be, perhaps unconsciously, abetting the charlatan and the pretender who live by the credulity of their patrons.

During the years that I have held these convictions and regulated my practice accordingly, the cases in question have brought me much less vexation and dissatisfaction, and also, I am bound to say, much less emolument. Not that I believe them to be entirely proof against intelligent treatment, for simply securing cleanliness will do much good, and the constantly recurring acute exacerbations can nearly always be benefited by sedatives and astringents. Hygienic measures and in some cases internal treatment are also of great value; and in many ways we can be of much use to our patients. But I have long since ceased to expect, as I have ceased to promise, complete and permanent cures.

THERAPEUTICS OF THE UPPER AIR-PASSAGES.[1]

By W. H. THOMSON, M.D.,

NEW YORK.

In complying with the request of the Chairman of the Section on Laryngology and Rhinology to address a few remarks, on the therapeutics of the upper air-passages, to the Academy this evening, I must, of course, deal with the subject from the stand-point of the general practitioner, rather than from that of the specialist. I do this the more cheerfully from my clear conviction that neither of these classes of our profession can do without the other; for I do not believe, on the one hand, that the progress of the medical art is becoming so unmanageable in extent that its field will have to be apportioned into wholly separate divisions, nor, on the other, do I believe that it is possible for the most thoroughly equipped physician to be able to do all that can be done for every patient without special help.

Shortly put, the case stands thus: The unity of the body renders the general practitioner useful to the specialist, while the complexity of the body renders the specialist often an indispensable associate to the general practitioner.

I begin, therefore, with the statement that, in my opinion, the treatment of chronic diseases of the upper air-passages should be directed chiefly by two principles, viz.: first, by taking cognizance of cutaneous nerve-associations in the causation and in the perpetuation of inflammations of mucous membranes; and, second, local disinfection.

First.—It can scarcely be questioned that the inhalation of irritating air is rarely the cause of either acute or chronic inflammations of the respiratory passages, except in the instances where infecting germs, as in pertussis, etc., are thus introduced. Rather we would say that some quite *local* chill of the surface is the occasion of a coryza or a pharyngitis or a tracheitis ten times to a direct irritation of the respiratory tract once. The peculiarity

[1] Read before the New York Academy of Medicine, April 21, 1887.

here, which is of great significance, though unknown in its mode of production, is that the internal disorders are not caused so much by general, but rather by very partial, external exposure. The whole body may be wet in a rain-storm, but no cold is thus caught with anything like the frequency that it is from sitting for some time with damp feet alone, while the rest of the body is warm and dry. On a winter day one may find the cold air blowing through a keyhole on the back of his neck give him a coryza which no walk would in the bitter wind itself. But while we cannot yet indicate all the steps in the causation of these familiar effects, yet a brief consideration may not be out of place of three laws of nervo-vascular association which may have some bearing on the question how internal congestions or inflammations follow upon external impressions.

The first law is that organs which exist in symmetrical pairs, such as the hands, the feet, the eyes, and the ears, are so closely associated in their vaso-motor relations that the same effect, so far as their circulation is concerned, is produced in both by an impression made only on one member of the pair. Thus Brown-Séquard showed that a thermometer held in one hand will drop 14° F. if the other hand be dipped in ice-water, while a thermometer in the axilla at the same time will mark no difference. On one occasion I made use of this fact while endeavoring to find the bleeding vessel in a pistol-wound through the palm of the hand, for as soon as the other hand was dipped in ice-water the bleeding was checked enough to make the examination much easier. In like manner, if the tip of one of the translucent ears of a rabbit be sharply pinched, the pulsating arteries in the other ear will at once contract into invisibility. It is on this principle that injury to one eye is so dangerous to the integrity of its fellow by consecutive inflammation.

It is fortunate that organs that are not in symmetrical pairs, as the lungs and the kidneys, do not show anything like such a close nervo-vascular association.

The second law is that there is a close association between the sensory nerves of any part of the skin with the vaso-motor nerves of the organs or viscera which are immediately within that part, so that like impressions on the cutaneous nerves produce like effects on the circulation of the inner structures. Thus, if a cold hand be suddenly laid upon the præcordium, the heart will give a bound and for a moment stop; so a cold hand laid on the abdomen will cause the uterus to contract; a dash of ether-spray on the chest is the quickest way to cause a hæmoptysis to stop, and I myself have often used a cold hand for the diagnosis of incipient phthisis. It may be tried by dipping the patient's own hand in cold water, so that he will not be so afraid of the procedure, and then laying it alternately over the right and left apex; if done suddenly he gives a short cough when the impression of cold is made on the affected side, but not when the application is made on the other. We need not multiply these examples, for this principle is illustrated in the recourse to all surface applications in internal disorders, such as rubefacients, blisters, and faradism to stimulate absorption, or poultices, etc., to allay irritation. No physician, in fact, should neglect cutaneous protection in all acute internal inflammations, such as pericarditis, pleuritis, etc., and I always give many details for such purposes in every case of phthisis or chronic bronchitis.

The third law is that there are certain special vaso-motor associations of widely separated parts which have no obvious functional connection with each other. The first of these which we would mention is between the vaso-motor nerves of the pelvic viscera and those of the feet. Thus, girls can stop menstruation by putting their feet in cold water, while, on the other hand, there is no emmenagogue which at all equals persistent application of dry heat to the feet; so also we find in males with an irritable stricture of the urethra, or an enlarged prostate, that nothing aggravates their infirmity so much as getting the feet wet or cold. On the same principle, if surgeons are troubled with bleeding in cutting for stone in an old case of vesical irritation, putting the feet in cold water will suspend the hemorrhage, as in the case of palmar wounds, above referred to. Again, irritation in the pelvis contracts the femoral artery; so that coldness and anæmia of the feet is the rule in all instances of ovarian irritation in women, and in cystitis or prolapse of the rectum, etc., in men.

Another such association, which bears more immediately on our subject, is between the feet and the circulation of the pharynx and larynx. Putting the feet in cold water is followed by an immediate paleness of the pharyngeal mucous membrane in contrast with the rest of the mucous membrane of the mouth. I should like to have this observation tested by others; for I am convinced that this association is quite unmistakable and peculiar, and best shown in normal cases.

Still another is between the nape of the neck and the circulation of the nasal cavity. While the relations of the cervical sympathetic, of course, are known to be very wide in the control of the circulation of the face, head, and throat, yet the close dependence of congestions of the nasal cavity on abnormal innervation of the cervical nerves has not been as fully recognized as I think it should in the management of some of the obstinate maladies of a region in which vascular disorders are so apt to be tedious, because we have so little muscular tissue to aid in restoring tone to the affected structures.

The limits of my paper, of course, will not allow me to follow up the statement or illustrations of principles further now than to say that we may expect in disease to find healthy nerve functions or properties often exaggerated to the degree of becoming serious complications which must be taken into account when we come to treatment.

Thus, no one would, *à priori*, have guessed that a healthy irritability of the sensory nerves of the bronchial mucous membrane may become so heightened in asthmatics that the mere presence of a little powdered ipecac in a room, or of buckwheat in a lower story, or the presence of a single cat in the house, would cause a sense of suffocation to set in immediately. But I have been satisfied from observation that many persons with chronic mucous catarrhs are affected by external influences which are wholly inappreciable by persons in health. We all of us, probably, have had a bad cold in the head on some occasion, which caused us to ask what door or window down-stairs was left open, when no one else perceived that a streak of cold air was stealing in from somewhere; and in chronic cases of nasal, pharyngeal, or laryngeal catarrh I am sure that many a patient has his trouble aggravated by a nocturnal exposure in bed of the neck or back of the shoulder which no healthy person would feel at all.

Hence, as regards treatment, I would say, first, that unfortunately we have but very few vaso-motor tonics or strengtheners, and for this particular weakness—for irritability is weakness—I know of nothing which will compare with the application of cold. The cold douche to the nape of the neck on rising, great care having been taken to keep the hair of the back of the head from being even dampened by the water, and cold salt-water sponging of the throat are measures which should be kept up for months together, in all affections of the upper air-passages. After the reaction from the douche is established and the skin is dried, the entire surface of the front and back of the neck and of the root of the neck, on the one hand, and then of the back of the shoulders, ought to be well rubbed with sweet olive-oil, to lessen the tendency to perspiration, or at least to check the chilling effects of rapid evaporation of the perspiration, which oils certainly do.

Our next indication is to protect the sensitive surface by special covering. Not only is muscular rheumatism strikingly benefited by sleeping in woollen night-shirts

and between woollen sheets, but I am sure that affections of the upper air-passages will be equally favorably affected by this measure, for I have repeatedly tried it. During the daytime a light woollen undergarment should be worn next to the skin, and over this a perforated buckskin shirt, made high in the neck before and behind and long in the sleeves. I cannot speak too highly of these buckskin protectors, not only in phthisis and bronchitis, but also in all chronic catarrhal affections. In my experience they are far superior to thick flannel underwear, and are to be dispensed with only during the really hot weather of summer. I have seen the same good results from buckskin drawers in cases of chronic diarrhœa and cystitis, which lead me to prefer this material to any other as a protective. The use, on the other hand, of partial coverings, like many of the chest-protectors which we find on our patients, I regard as almost worse than useless.

Second.—As to local disinfection. We are certainly living in an era of medicine in which it is difficult to keep one's head level in the midst of such a rush of discoveries and of pseudo-discoveries. Nevertheless, it is impossible to resist the steadily increasing mass of evidence, that purulent inflammation, as such, is always the result of infection. The demonstrations lately shown us by our distinguished fellow-academician, Dr. Herman Knapp, that rabbits' eyes operated on by the best-kept surgical blades by the best operator yet become disorganized by purulent inflammation, while eyes lacerated by rough pieces of iron heal without a trace if only the iron be sterilized first in the lamp-flame, are but in keeping with a multitude of similar positive proofs that no weakened living tissue—whether weakened traumatically, or weakened in its innervation, or weakened in its nutrition—can exist in our atmosphere without being at once attacked, not by chemistry, but by life. We are everywhere and always exposed to powerful living enemies, which have only recently been made visible to us, and we are safe in whole or in part against them only as we can keep up in whole or in part that resistant power which we call life. As soon, in other words, as a particular tissue begins to lose its normal amount of vitality, the enemy finds it out and begins the attack.

Now, the great difficulty in the treatment of chronic mucous inflammations doubtless lies in this very direction, owing to the structure of the tissue itself. For example, the micrococcus of gonorrhœa has a habit of retiring into the deep follicles and crypts of the urethra, where injections cannot follow. One germicide after another may be tried, and the canal will seem for a while to be thoroughly disinfected and cured; but after a time the reappearance of the gleety secretion shows that another generation of the coccus has come forth from some hiding-place to occupy the field again.

That the mucous membrane of the upper respiratory passages should be exposed above all others to these atmospheric intruders is of course obvious. In fact, many of them are visible enough, as the aphthæ in the dying frame of the consumptive. Others are plainly to be inferred as frequent visitors, as in the case of the communicable influenzas, or colds, which daily meet us, invading a family and spreading from one member of it to another. So, also, the clinical features of hay-asthma can be satisfactorily explained in no other way; but the most practical deduction is this—that, as pus can be prevented only by excluding germs, so all chronic mucous inflammations can be got rid of only by excluding the presence or preventing the activity of germs.

We may do this, I imagine, in two ways. One is by improving the resisting power of the tissues. Under this head would come the removal of all weakening influences, some of which we have already referred to—namely, by attending to local vascular innervation; another is by dealing with hereditary weakness of particular tissues which predisposes them to be attacked by invaders. Increased nerve- and cell-nutrition by cod-liver oil is an example of meeting this indication.

The second way is to use disinfectants directly. Here we may say that so recent is this whole subject, in its bearing on the etiology and treatment of disease to the profession at large, that we need not be surprised if our methods of attempted disinfection of the air-passages are both crude and ineffective. The chief obstacle in our way lies in our inability to prolong the employment of the disinfectants enough to be of any real service. An ideal respiratory disinfectant would be an ingredient of the air breathed continuously night and day for a week or more. Such a disinfectant is the air of the ocean several hundred miles out, or of certain mountain localities against the germ of hay-asthma. I believe that some such disinfectant will yet be found against the tubercle bacillus; but when we turn to attempts to fill the nostrils with vapors or insufflations, or the pharynx or larynx with spray, we are met at the outset with the difficulty of temporary effects—temporary either because to secure permanent effects the concentrated agents would be too irritating, or else from the impossibility of having our patients keep up voluntary inspiratory efforts for more than a few minutes. Nevertheless, it is in this direction that I look for the greatest progress to be made yet in the therapeutics of the upper air-passages. Undoubtedly a certain proportion of cases are dependent upon malformations, congenital or acquired, occurring in the nasal channels, and in them surgical measures promise the readiest relief; but otherwise the greatest advances will be made, I imagine, by discovering both how to use disinfectants and what disinfectants to use.

With respect to this latter indication, I would remark that there is considerable room for observation. I have long been satisfied that the carbolic-acid class of disinfectants has special applications, but not universal ones, and that for certain common purposes this class is much inferior to others. By the carbolic-acid class I mean derivatives, natural or artificial, from woody or vegetable tissues. All coal-tar derivatives come under this head, and also those products in nature whose purpose is evidently to keep the seeds or bark or texture of the plant from being attacked, such as the spices, camphorous and aromatic secretions, also salicin, quinine, etc. These numerous agents are all closely allied, both in their physiological effects on the human nervous system and on the temperature of the body, and as disinfectants they are the best for this one particular object—namely, for all suppurative disorders.

For necrotic affections, on the other hand, they are decidedly inferior to the chlorine class. This class is a chemical order of disinfectants which acts by the double process of affinity for hydrogen, causing it to kill fungi by decomposing the water of their tissues to get the hydrogen, while at the same time it sets free nascent oxygen, a no less powerful disinfecting agent in its way. To this class belong chlorine, iodine, bromine, and sulphur, and whenever we have a non-purulent secretion with malign odor, as in bone-necrosis and in many chronic thin mucous discharges, the steady employment of some member of this class promises, I think, much better results than any of the carbolic-acid class.

I have long used insufflations of calomel in bismuth in nasal catarrh, for disinfection, and have never yet seen any injury from them. I prefer this also as a means of affecting the pharynx through the nose, because of the greater adhesiveness of the powder on the parts than articles used in spray-solution. But as I doubt not that the Academy will have much more extensive and varied information about such measures from others, I will now close by saying that, with the principles of treatment established on much superior premises than was possible in former times, we have every reason to expect great triumphs in the healing of affections long the despair of our art.

THE Post-Graduate schools of this city are in a very flourishing condition, the classes being larger than ever.

A PAPER CONCERNING A FEW POINTS IN PRACTICAL LARYNGOLOGICAL AND RHINOLOGICAL WORK.[1]

By H. HOLBROOK CURTIS, M.D.,

NEW YORK.

The following conclusions have been deduced from a close observation of over one thousand cases in which I have practised the enlargement of the upper air-passages, viz., the restitution of their normal calibre by means of the employment of chromic acid to erectile tumefactions and true hypertrophies; or surgical interference to remove cartilaginous or bony obstructions caused by septal deflection, etc.

Subacute catarrhal inflammation is present in all cases where there has existed for some time a nasal stenosis due to deviations of the septum or to hypertrophy of the turbinated bodies, or to erectile tumefactions due either to over-stimulation of the normal erectile tissue of the turbinated bodies or a lack of vaso-motor resiliency, allowing permanent dilatation of the venous plexuses therein contained. This subacute catarrhal inflammation extends to the pharynx and is generally accompanied by more or less glandular hypertrophy in the post-pharyngeal wall. This so-called granular condition of the posterior wall is due to mouth-breathing, and immediately subsides upon the free opening up of the nasal channels.

The more occluded the air-passages of the nose, the more extensive the glandular hypertrophies in the pharynx. Any treatment directed to these glandular masses without enlargement of the nasal fossæ is misdirected.

Chronic post-nasal catarrh unaccompanied by stenosis does not exist. Conditions that simulate this may be usually referred to disease of the ethmoid cells, especially in the anterior group.

Disease of the ethmoid cells is generally due to a hypertrophy of the middle turbinated bone and consequent occlusion of the exit of ethmoidal secretions.

The treatment of this most obstinate condition should consist in the application of chromic acid to the thickened middle turbinated body which is found to impinge on the external wall of the middle meatus, in order to allow of a free exit to the secretions of the anterior ethmoidal cells and a proper oxygenation of the cavity. By passing a thin flat probe between the pendulous-thickened middle turbinated body and the outer wall we demonstrate the existence of this retained muco-purulent secretion—a condition frequently overlooked by simple examination with the nasal speculum. The symptoms of this disease are those of ordinary chronic rhinitis, with perhaps more fulness attributed to the cribriform region, with free expulsion of the secretion at intervals into the pharynx. The patient will also blow the nose and entirely free the cavities, so far as an examination reveals, but often in a few moments will again have a copious discharge upon the handkerchief. When the disease has to do with the posterior ethmoid cells, the tenacious secretions are poured down between the middle turbinated body and the septum, coming from the superior meatus. This complication is easy to diagnose, but I consider it of rarer occurrence. I introduce this disease to elucidate what many writers consider a post-nasal catarrh.

I have made application of chromic acid to the inferior turbinated bodies for the past six years in my private and dispensary practice, and do not remember a case that has come to me for treatment for catarrh during that time, in which there was found to be hypertrophy or erectile tumefactions, where I have not employed it to the exclusion of all other escharotics.

So great is the importance, in my estimation, of a re-establishment of the air-current through the upper air-passages, and particularly through the inferior meati, in the treatment of all the affections of the larynx, non-specific or non-tubercular—and I say it with all premeditation—that I would not to day exchange the flat probe and chromic acid for the combined douches, sprays, and therapy of the best laryngological establishment. In saying this I would not, however, depreciate the employment of the spray as an adjunct to treatment.

In estimating the effects of enlarging the upper air-passages on the larynx and vocal bands, I would state that quite a number of professional singers have applied to me for the operation of "burning the nose," simply for the direct improvement of quality or *timbre* in the vocal resonance, so magical is the effect upon the voice. To sum up the benefits of the operation to the patient, we find comparative immunity from cold in the head and sore throat, softening of a dry post-pharynx, disappearance of glandular hypertrophy in the pharyngeal wall, and glosso-epiglottic fossæ, disappearance of chronic congested conditions of the vocal bands causing huskiness of voice, relief to bronchitis, acute and chronic, relief of spasmodic asthma (sometimes immediate), and great strengthening of the power and endurance of the voice. A voice that has become cold and hard will in a day or two regain its sympathy and musical quality after an enlargement of the air-passages. Destruction of the erectile tumefactions, unless true hypertrophy exists, is not necessary, for when the erectile bodies become permanently dilated by paresis of the inhibitory nerve-force of the sympathetic ganglion (or acted upon by a permanent reflex impression from a correlated area, causing partial paralysis of the efferent vaso-motor fibrillæ), it is only necessary to use the acid in such quantity that a cicatricial envelope be superposed which will act as a bandage or retaining-wall to the dilated vascular plexus and permit the fossæ to remain unobstructed. That the correlated areas are in reflex sympathy directly by influence exerted through the chain of sympathetic ganglia seems to me to account for the direct impression imparted to the vocal cords by applying chromic acid to the turbinated bodies. The question of remote reflex phenomena has been the subject of much research by Woakes, Mackenzie, and others, and their theories are certainly borne out in my experiments. In no other way can I account for an immediate effect on the membrane covering the vocal cords. I would cite a case to illustrate:

Miss H——, a prima donna, presented herself on the occasion of a special performance in which she wished to appear to advantage. Vocal bands slightly congested, slight erectile tumors at anterior aspect of inferior turbinated bones; no pharyngitis worth noting. Said singing was a great effort, and she feared her inability to perform. I used chromic acid freely to the anterior enlargements, and was surprised to find her voice markedly improve at once, and she told me the following day she had made a brilliant performance.

Since that time the patient has, on two occasions, come to me from Philadelphia between performances to have chromic acid applied when, in her words, her voice was "used up," and she tells me that it always restores the brilliancy of tone, though there seems to be no necessity for the operation. I have on many occasions repeated this upon other singers with the same result.

This is manifestly a reflex impression and bears a striking relation to the immediate relief sometimes afforded in spasmodic asthma upon attacking the turbinated tissues with an escharotic. To illustrate a class of cases to show the effect on hoarseness due to subacute catarrhal laryngitis, I cite the following:

Miss C——, the leading lady in one of our theatres, had suffered from recurrent attacks of hoarseness for two years, and had been afflicted with hay asthma during the last six seasons. I found stenosis of both nostrils almost complete, due to erectile hypertrophies, granular pharyngitis, and subacute laryngitis. She had been treated almost daily with astringent sprays and inhalations. I stopped all applications to the larynx and

[1] Read before the New York Academy of Medicine, April 21, 1887.

freely destroyed the superabundant tissues, using the nasal saw to correct a slight anterior cartilaginous tumor of the septum. In a few days her voice was entirely restored. The treatment was continued at intervals of ten days for six consultations. The patient informed me a few days since that from the first application she had never been hoarse, now over a year ago, and she had escaped asthma during the summer of last year, though her eyes were somewhat affected during the corresponding period of her previous attacks. My case-book records very many parallel cases, and the wonderful relief afforded in cases of spasmodic asthma by this simple operation is a source of constant gratification

So much, however, has been written on the subject that it seems hardly worth while to allude to it here.

As to bad results from the employment of chromic acid, I have seen none. The acid should be carefully used, a deliquesced solution smeared on one side of a flat copper applicator, and a few moments after making the application to the tissues it should be washed off with a Dobell spray. A little care must be taken not to bring the acid in contact with the soft tissues of the palate, or a painful uvulitis may result.

True hypertrophies, which are of rare occurence and frequently need the trephine or saw to assist in their removal, seldom return. Erectile tumefactions which do not deal with proliferation, but simply dilatation, sometimes need cicatrizing once a year. A majority of these cases, however, are either permanently cured, or await exciting causes, such as continued colds, etc., for their recurrence.

From even my own rather limited experience I think that aurists have not as yet become cognizant of the enormous advantages to be obtained from the restitution of the lower, and especially the lowest, air-tract of the nose. The inferior meatus is the true oxygenator of the Eustachian tubes, and a deflection of the air-current to the middle meatus is, according to several authorities, often the origin of aural complications.

That the relief of obstinate tinnitus is ofttimes assured upon re-establishing the nasal respiratory function in the proper channels is unquestionably true, and this I find will often cure tinnitus after many other means have been attempted. I am at a loss to explain whether this is by reflex sympathetic action or by simply directing a stream of air into the Eustachian orifices, for, by a deflection of the nasal respiratory current to the middle meati, some writers contend that a vacuum may be produced by the air rushing downward over the projecting prominence of the tube, and thereby cause concavity of the tympanum and associated troubles. This subject I prefer to leave for another occasion. The reflex symptoms caused by polypi, which usually are attached to the middle turbinated body, are an exaggerated type of those reflexes which are, generally speaking, associated with stenosis. Operative procedure I have not touched upon; but the results obtained by the application of the saw and trephine to the deviated septum are coincident with those of relieving the commoner forms of stenosis.

To conclude I would say that the sooner the farce of applying strong astringent solutions and nitrate of silver to the larynx and upper air-passages is done away with, and the proper appreciation given to the magnificent results obtained by restoring the function of respiration, as nature intended, the sooner laryngology will be placed on a higher plane, and an immediate relief given to countless thousands who imagine an incurable, so-called, post-nasal catarrh.

29 West Thirtieth Street.

Mrs. Kimura Hida, who is one of the promoters of the lately established Female College of Tokio, has been admitted to the medical course of the Japanese Imperial University. This is the first lady that has been admitted to the Imperial University—*Sei. I. Kwai Medical Journal.*

TOPICAL APPLICATION TO THE UPPER AIR-PASSAGES.[1]

By WILLIAM CHAPMAN JARVIS, M.D.,

new york.

Although the question of topical medication as applied to the upper air-passages has already received much attention, a discussion of its comparative value cannot fail to prove profitable, on account of the modifying influence which has been recently exerted by the great advances in nasal surgery. Foremost among the means employed for the treatment of affections of the upper air-passages stands compressed air. A pump and air-reservoir capable of withstanding great pressure are required to render this therapeutic medium serviceable. No argument is necessary to prove that the value of the spray has been greatly over-estimated in prescription and practice. It is quite possible that the confidence evinced by the advocates of this measure can, in part, be attributed to the scanty and unsatisfactory surgical measures at the physcian's disposal during several years following the period of its introduction as a therapeutic agent. That the spray-producer still subserves a useful purpose cannot be safely denied. I believe, furthermore, it is possible to determine the extent of the spray-producer's usefulness and to name the several conditions which indicate its employment. I consider it the most useful means we possess for the application of cocaine-solutions. It may occasionally be employed for cleansing purposes, and, even in the nostril, is sometimes preferable to the douche; it offers us the only medium for the production of rhigolene anæsthesia; it affords us a useful means for the application of the various preparations of vaseline, and can be profitably employed for the projection of medicated powders. A great deal of confusion seems to exist in regard to the true significance of pounds pressure. When speaking of compressed air, ten, twenty, thirty pounds mean nothing until we ascertain the size of the spray-tube's orifice. Thirty pounds pressure behind a tube with an orifice of one one-hundredth of an inch means a gentle spray; the same, through an orifice of one-eighth of an inch in diameter, forms a powerful, intolerable blast. Hence, I think, one should always designate the dimensions of the orifice of escape in speaking of pounds pressure. My standard of pressure varies between ten and fifteen pounds. For cleansing purposes, I employ sprays whose orifices vary from one-sixteenth to one-eighth of an inch.

Coarse sprays, when employed intelligently, constitute one of the most effective and agreeable means in our possession for cleansing the nasal cavities. The syringe-like action of the projected fluid is re-enforced by the mechanical effects of the compressed air. There is less danger from the entrance of fluid into the middle ear, a fact which determines its sole employment in certain cases. The spray-producer is valuable more as a means for obtaining relief than as an instrument for producing a cure, when considered *per se*. The utility of the syringe, however, is unquestionable, and in many instances it is to be preferred to the spray. Compressed air affords us a most valuable means for the satisfactory employment of medicated powders. The therapeutic action of powders, and particularly of iodoform, is promoted by the remakably fine state of sub-division attained when they are applied according to the method of Ely.

In the employment of that most reliable and efficient of all intra-nasal anæsthetics, namely rhigolene, and especially in the treatment of gelatinous polypi and turbinated hypertrophies, with the fluid, we rely upon compressed air as the only means for obtaining the benefits of this agent. Spray-tubes with very small orifices, $\frac{1}{33}$ to $\frac{1}{100}$ of an inch in diameter, are required for the production of rhigolene anæsthesia, in order to avoid the excessive escape of fluid.

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[1] Remarks made before the New York Academy of Medicine, April 21, 1887.

Inasmuch as the vast majority of catarrhal processes in the nasal cavities are due to nasal obstruction, and its natural results, impeded respiration and disturbances to nasal drainage, we must rely upon the practice of special surgical procedures, which have for their purpose the restoration of nasal respiration and normal drainage. I have already pointed out that excess of nasal mucus was due more to the inspiration of accumulated discharges from irregular conformation than from a true hypersecretion.

As regards the use of chromic acid, while I promptly recognize some of the good results which follow the employment of this therapeutic agent, its remarkable solvent action, for example, when applied to laryngeal papillomata, I find it impossible to subscribe myself in favor of its employment for the removal of turbinated hypertrophies. That chromic acid is capable of reducing turbinated hypertrophies, if persistently applied, cannot be doubted for a moment, but that it is the best therapeutic agent for this purpose must, in view of ample contradictory evidence at hand, be emphatically questioned. I have met with several forms of more or less severe annoyance where this agent has been employed, from the common traumatic rhinitis to extensive inflammation of the post-nasal structures and œdema of the soft palate. I cannot understand why the employment of this caustic should be persisted in, for many days at a time, with the object of removing a small turbinated hypertrophy, when it is always possible to transfix the redundant tissue by means of a slender needle, and remove it by means of the snare-écraseur in a few minutes, with no inconvenient after-effects. The same statement applies with even greater force to the galvano-cautery.

There are many more interesting points relating to the subject, the consideration of which I feel compelled to omit on account of the necessary limitation in time.

Progress of Medical Science.

PAROXYSMAL TACHYCARDIA.—In a recent lecture, Nothnagel directed attention to a case of "paroxysmal tachycardia, combined with failure of the heart." On the forenoon of October 6th, 1886, the patient, aged thirty-six, was admitted into the hospital, his pulse-rate being at that time 120 in the minute. In the afternoon it was 144; on the next morning, 90; during the following day 84 and 82; on October 9th, morning, 82; in the afternoon, 138; on the morning of October 10th, 178; at eleven o'clock the same day 170, and soon afterward 182; on the morning of October 11th 84, at half-past ten o'clock 176, at four o'clock 132, at five o'clock 144; the next morning at eight o'clock it was 176, at nine o'clock 144, at ten o'clock 146, at eleven o'clock 134, at mid-day 144, at four o'clock 168, in the evening 164; on October 13th it was 92 in the morning, at nine o'clock 88, and soon afterward from 170 to 180. This acceleration of the pulsations lasted from half-past one till half-past three; at five o'clock the patient's pulse was 96. On October 14th it was 72; on the 15th 76, and so on, the number of the pulsations being again normal. The temperature was normal throughout. The patient was seized with these paroxysmal attacks without any apparent cause, and they were very variable in duration. On one occasion the paroxysm lasted for two hours, another time about two days; the longest duration was from three to four days; the average duration was from one to one and a-half day. The attacks occurred without any artificial stimulant whatever, such as coffee or tea, nor were they caused by any psychical irritation; they showed no gradual transition, but came on and ceased quite abruptly. The patient happened once to be seized with a paroxysm of 176 beats immediately after laying down a book, the contents of which had not interested him in the least. The attack was accompanied with a feeling of anxiety, but Professor Nothnagel emphasized the fact that this anxiety was not such as was met with in angina pectoris. All the other characteristic symptoms of that affection were absent in the case in question. The attack disappeared quite suddenly, and the patient stated that he had then the feeling "as if something would fall away." The patient further stated that he "sometimes succeeded in suppressing the attack by a deep and prolonged inspiration, especially if he at the same time drank a glass of cold water." Professor Nothnagel told the patient to do this during an attack, and after the patient had swallowed half a glass, Professor Nothnagel was able to state that the number of the pulse-beats had decreased quite suddenly; he felt three slow and large beats, and soon afterward the number of the beats was again about 180. Professor Nothnagel also made other experiments; he told the patient to swallow a spoonful of common salt; he compressed the crural nerve very strongly, and wound a thread around the upper extremity, but these manipulations produced no effect. The patient himself stated that the draught of cold water had not much to do with the cessation of the attack, but that it was chiefly due to the deep inspiration. Professor Nothnagel remarked that some cases of paroxysmal tachycardia were to be found recorded, but that paroxysmal tachycardia in cases of organic heart-disease were very rare, and that he did not remember any similar case in medical literature. As to the explanation of this phenomenon, the lecturer said that of course there was no doubt that one had to do in such a case with a disturbance of innervation, but that the question as to what nerve-tracts were affected was very difficult to answer. As to the existence of an accelerator-nerve of the heart in the human species, this was still a matter of dispute. Only two nerve-systems could be taken into consideration in the case in question—the pneumogastric and the musculo-motor apparatus in the heart. It was conceivable that there might be some irritation of the cardiac musculo-motor apparatus in the substance of the heart itself; or again, there might be sudden paresis of the vagus. It was very difficult to decide which explanation was correct in this case, but according to the impression the lecturer had received from the observation of one of the attacks, he was rather inclined to the latter view. One might suggest that, in the same way that intermittent paralysis occurred in other motor nerves, such intermittent functional paralysis might also occur in the vagus. Professor Nothnagel thought it very probable that this hypothesis was correct.—*The British Medical Journal.*

HYOSCINE IN KIDNEY DISEASE.—Dr. Tisard, of London, believes (*The Practitioner*, February, 1887) that hydriodate of hyoscine is a drug which can be used with perfect safety in cases of kidney disease where morphine is inadmissible. It is a drug which may give rest when other sedatives fail. He also states that if used in two-minim doses, subcutaneously, it may give more satisfaction to the patient than to the attendants, since the unconsciousness may be accompanied by angry and combative delirium; should this occur it will probably be sufficient to diminish the amount employed. It is very rapid in its action, unconsciousness following in from ten to twenty minutes, and the after-effects are of a soothing character. Even when delirium is present in a violent form, it is followed by quiet sleep, and the patient, being unconscious, is much more refreshed than by a night of short snatches of sleep produced by chloral or bromide, and the result is a marked improvement in both aspect and temper. No irritation is produced around the site of injection.

EARLY DENTITION.—Dr. Frank Groat, of Fremont, O., reports the case of a child, born in 1855, who had four lower incisors at birth. The parents were English, and there was nothing in the condition of the mother to account for the phenomenon.

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A NEW ERA IN THE THERAPEUTICS OF PULMONARY PHTHISIS.

THE discovery of the tubercle bacillus, as soon as its importance came to be fully realized, gave a new impetus to the efforts of those who had been occupied in what seemed to be the vain task of searching for some means of curing pulmonary consumption. If the cause were known, it seemed so simple a problem to apply the remedy. The remedy, indeed, was found—many remedies were found—but the difficulty was in their application. Many methods have been tried, some of them most ingenious in their conception, with more or less encouraging results. It may, perhaps, be of interest to our readers to review briefly the methods thus far proposed, to see what advances have been made, and to learn what is the hope of ultimate success in the cure of this scourge of man and beast.

Antiseptic substances had been given empirically long before the parasitic nature of the disease had been discovered, but now they were given with greater hope, though not always with greater success. It was soon recognized that the internal administration of germicidal remedies could exert but little curative effect on the local disease, and the attempt was made to apply the remedies directly to the seat of the affection in the lung itself. The different methods employed to effect this object may be divided into several groups. We have (1) the internal administration of substances excreted chiefly by the lungs; (2) inhalations; (3) intra-pulmonary injections; (4) gaseous rectal injections, and (5) the more strictly surgical procedure of incision into the cavity, evacuation, and drainage.

Among internal remedies, arsenic enjoyed a reputation long before the rise of the theories now in vogue, and it still holds its ground as a valuable tonic, even though its germicidal power in small doses may well be doubted. Tannin, in daily doses of from thirty to sixty grains, has also been recommended in the strongest terms by Arthaud and Raymond. Filleau gives carbolic acid, in doses of two grains every day or two, hypodermatically. He was led to employ it thus on the ground that the drug is largely excreted by the lungs, and he reports a number of successful cases. He never saw any serious toxic symptoms produced.

Naturally, inhalation has been the most frequently resorted to, as seeming to offer a simple and efficacious means of applying antiseptic substances directly to the focus of disease. The list of drugs so employed embraces nearly all the antiseptics and germicides known to medicine. Corrosive sublimate, hydrofluoric acid, anilin, naphthalin, sulphurous acid, iodoform, menthol, and camphor are only a few of the many which have been vaunted as specifics by various enthusiasts in all parts of the globe. Experiments have demonstrated two facts, however, which argue against the probability of much benefit being derived from inhalations. In the first place, the tubercle bacillus is destroyed with considerable difficulty, the ordinary antiseptic solutions having but little effect upon it. Then, again, the vapor or spray is not likely to penetrate far enough to reach the bacilli whose destruction is sought, unless it is driven in under a strong pressure, for the production of which expensive apparatus is needed.

The ingenious conception of Cantani should be mentioned here. He endeavored to effect the destruction of the tubercle bacilli by means of inhalations of pure cultures of bacterium termo, as experiments outside the body had shown that these two forms of micro-organisms were mutually inimical. These attempts, however, were not encouraging enough in their results to lead to many repetitions.

The introduction of microbicidal agents by means of injections into the lung-substance at the seat of the lesion is a more rational measure, and seems to be of greater promise than those above mentioned. These intra-pulmonary injections were, it is true, practised by Dr. Pepper long before Koch's discovery was published to the world. He injected a dilute solution of iodine with the object of favorably modifying the morbid process. But it is since the new theories of tuberculosis have come into vogue that this method has found most favor. When properly made, these injections seem to be devoid of danger and do appear to alleviate the more urgent symptoms, if nothing more. But those who have had the most experience with this method hope for more than palliation, and even look forward to permanent cures. The drugs that have been employed in this way rival in number those given by inhalation. A modification of this method is that of Riva, to which we referred very recently in these columns. He is not satisfied with the injection of a few drops of the antiseptic fluid, but seeks to bathe the entire parenchyma of the lung in the vicinity of the tubercular focus with the bacillus-destroying solution. It is not possible yet to determine whether this modification possesses any practical superiority over the older method of injection.

We have finally to notice the treatment of advanced pulmonary tuberculosis by incision and drainage of the cavity. This method is even older than that of intra-pulmonary injection, having been practised in the early part of this century. It has the appearance of being a formidable operation, and comparatively few have had the temerity to attempt it. The advocates of the operation argue that tuberculosis of the lung is as strictly a local process as tuberculosis of a bone, and is as certainly relieved by surgical measures. Some of the cases operated upon would seem to have justified these views by the results obtained, while others have been less happy in their sequel.

It is certainly very encouraging to see so much activity in this direction, and the hope of eventually bringing pulmonary phthisis into the class of curable diseases seems to be not without foundation. But, nevertheless, it is wise not to be too sanguine, and we may well close this hasty review of the modern therapy of phthisis with the words of Dr. Pollock, uttered at the conclusion of the Croonian lectures for 1883. "No parasitic theory," he says, "can lessen the importance of the use of tonics and cod-liver oil. Supposing we possessed a local remedy of sufficient power to insure the destruction of such bacilli as are met with in the secretions, their rapid reproduction would soon overtake our treatment." And the same may be said even after we have destroyed all the bacilli present in the lung-tissue. Until we have succeeded in overcoming the predisposition to the disease we are liable to disappointment in witnessing a speedy return of the malady which we had congratulated ourselves had been thoroughly and entirely eradicated.

THE QUESTION OF OPERATION IN PERITONITIS.

A GREAT change has taken place in recent years in the minds of surgeons as to the dangers of abdominal section. While formerly the peritoneum was regarded as a *noli me tangere*, only to be incised as a last resort in desperate cases, surgeons now feel scarcely any more compunction in opening the abdomen than in removing the breast or amputating a foot. Exploratory incisions are almost of everyday occurrence, and, speaking generally, the results of such operations seem to justify the contempt which is felt for the formerly dreaded peritoneum. Not only is operation resorted to for the removal of tumors and for the relief of other troubles falling legitimately within the province of the surgeon, but even in so-called idiopathic peritonitis it has been proposed to open the abdominal cavity and provide exit for the products of inflammation, and the operation has actually been done several times.

Dr. Albert, writing in the *Allgemeine Wiener Medizinische Zeitung*, No. 10, 1887, discusses the question of operation in peritonitis, and considers briefly the indications for its performance. Leaving aside the subject of exploratory incisions and operations for the removal of tumors and the relief of other diseases of the intra-abdominal organs, he treats of those cases in which the condition of the peritoneum itself serves as an indication for operative interference. These several conditions he classifies under three groups.

In the first group are those cases of acute septic peritonitis arising from rupture of the intestine and escape of its contents into the abdominal cavity. Here the indication is very distinct to open and cleanse the peritoneal cavity, at the same time closing the intestinal wound or stitching the gut to the external wound in such a way as to establish a temporary fecal fistula. When the rupture of the intestine has taken place without a previous wound of the abdominal parietes, the operation is rendered more difficult by reason of the trouble which is often experienced in finding the point of injury of the gut. The detection of this lesion may sometimes be facilitated by following up the hemorrhage or the clot to its highest point where this is possible.

The second series of cases comprises those in which a general septic peritonitis has followed after an operation in the abdominal cavity, undertaken for any cause. Such cases were formerly of more frequent occurrence than they are, fortunately, at the present day. In a case of this nature it would be necessary to reopen the abdominal cavity, wash the peritoneum, and provide for thorough and free drainage. The peritoneum should be repeatedly irrigated until the inflammatory process is arrested.

The third group comprises cases of so-called idiopathic or rheumatic peritonitis. Leyden proposed operation in these, and Rose performed abdominal section twice, but with fatal result. Since then, however, others have operated in cases of idiopathic peritonitis, and have saved their patients. The author believes that an operation is justifiable in such cases, as the results have shown that recovery is to be hoped for, whereas without surgical interference the disease would doubtless have gone on to a fatal issue. Nevertheless, it is not probable that the surgical, or rather the operative, treatment of simple primary peritonitis will ever, in this generation at least, find general favor among conservative practitioners.

CHARCOT ON THE DANGERS OF HYPNOTISM.

A LAW was recently passed in Italy forbidding public exhibitions of animal magnetism, mesmerism, and the like, which has given rise to considerable discussion in the lay and medical journals. Dr. Melotti wrote to Charcot for his opinion as to the justifiability of the measure, and received a reply, which is published in *La Riforma Medica*, reprobating in the strongest terms all such public exhibitions of hypnotism.

"Hypnotization," he writes, "is by no means so devoid of danger to the subjects as is generally supposed, and it is evident that it is only by careful clinical study that the indications and the contraindications for the employment of this therapeutic agent can be, with any accuracy, established. But this is not the only reason why such public exhibitions should not be permitted. The hypnotic state is nearly related to the hysterical neurosis, which, under certain circumstances, shows itself to be highly contagious." In support of this assertion, the author referred to the numerous cases of hysteria which had been observed in Milan, Turin, and elsewhere, in consequence of these popular representations of somnambulism.

Finally Professor Charcot says, "Medicine has taken possession, in the name of science and art, of hypnotism, and she demands that it shall be entirely her own, to develop and to use in the cure of disease. In this recently acquired dominion she is jealous of her rights, and wishes to reign as the absolute mistress, free from any outside interference. It is only in this way that such an agent can be made of use to mankind, and can be prevented from working injury to the human race."

THE NATURE OF FEVER.

IN the four-fold definition which the old writers gave for inflammation, "calor" occupied a prominent place. By mere tactile sensation they were able to make a rough estimate of the amount of bodily heat. Some of them

became very exact, even by this crude method. The introduction of the clinical thermometer placed the relations of body temperature to disease on a scientific foundation, and those of us whose years of practice are few can scarcely imagine a time when it was unknown.

It has remained for later years, however, to exhume many of the questions which were presumably settled decades ago. One of the questions discusses the essential nature of that condition which we call fever. It is not a final settlement of the case when we say that a patient has a temperature of so many degrees. Such a use of the thermometer is merely empirical. There is a constant access of heat to the body from various processes which go on within it. There is a constant loss by various channels. The condition at any time is the balance between these two opposing functions. We should be able to gain an accurate idea of the relations which these two functions are bearing to each other in each individual case. That the themometer does not tell us.

The discussion on this topic has received a new impetus from the recent Gulstonian lectures by Dr. MacAlister. It has been heretofore considered that the motor and heat-making functions were in very close relationship. We have come to learn, however, that this relationship may be profoundly modified in the living organism. The motor function may persist while the thermogenic or heat-making function may be in abeyance. The latter is now regarded as being directly under the control of the nervous system—so far at least as its regulation and distribution are concerned. "Wherever," says Foster, "metabolism of tissue is going on, heat is being set free." It is not a new idea that the nervous system controls this important function. Positive evidence, however, has been slow in accumulating. Half a century ago Brodie called attention to the fact that the temperature rose after injuries to the spinal cord. Tscheschichin noticed that in rabbits after section of the cord a fall of temperature occurred, but that a section carried through the line of junction of the medulla with the pons caused a marked rise. The latter fact suggested a "heat centre" in the higher nervous structures.

Dr. MacAlister regards the heat of the body as coming from a substance—thermogen. Stimulation of certain nerves connected with the centre gives rise to its destruction. This metabolism liberates heat, and these nerves are called catabolic. Stimulation of other nerves (anabolic) causes a reformation or restoration of this thermogen. There is a close relation between the heat-centre and the motor-area. This correspondence is what we might naturally expect in view of the association of motor activity with the heat formation. The exact location of the heat-centre we are not sure of. Sachs and Aronsohn found that stimulation on the inner side of the corpus striatum caused a rise in temperature.

There are therefore three different factors in any given temperature in the body—the heat-forming, the heat-losing, and the heat-adjusting or, as Dr. MacAlister says, thermogenetic, thermolytic, and thermotaxic. Combinations of these in varying intensity may give febrile symptoms without noticeable temperature, as in mania, and we may also have temperature without marked febrile symptoms. In cold-blooded animals the thermolytic function is the most prominent. In infants, with their characteristic unstable temperature, the thermolytic and the thermogenetic are both in action. In adults both exist, and in addition the thermotaxic. In the onset of any systemic fever the latter first becomes affected, next the thermogenetic, and finally the thermolytic. In convalescence the order is exactly reversed.

From this brief allusion to these important lectures it is evident that we have come to a new era in the study of body temperature, both in health and disease. The complexity of this and similar problems seems often to increase the farther we go. We are, however, bringing into acceptance theories which more and more explain observed phenomena, and therefore constantly approximating toward the ultimate truth.

News of the Week.

A HARD STATE IN WHICH TO PRACTISE.—Virginia is a State which quacks and the uneducated medical aspirant are likely to shun. At the last meeting of its Board of Examiners nineteen persons applied for licenses, and only seven passed the required examination. This is a severe, but we fear a just, commentary on the slovenly methods of teaching and the laxity of final examinations in many of our medical colleges. The *Virginia Medical Monthly* says: "The object of this Virginia Board is to test candidates for practice in Virginia only upon their merits as brought out by examinations. No college professor is on the Board. The Board stands as a higher court than the college faculties; it has to pass upon the work done by the colleges. Fortunately for Virginia, the Board is composed of men well qualified for the discharge of this duty. The standard of graduation claimed by most of the reputable colleges of the country is seventy-five per cent. The Virginia Board of Medical Examiners adopts the same standard, and tests applicants solely by this standard."

MEDICAL DEGREES FOR WOMEN IN AUSTRALIA.—At a meeting of the Council of the University of Melbourne, on February 21st, it was decided by a large majority to admit ladies as students of medicine. The principle thus indorsed is all right, but practically it has been found that the co-education of male and female medical students is often attended with considerable difficulty.

AN INTERCOLONIAL MEDICAL CONGRESS is being organized, to include physicians of Australia and neighboring colonies. It will be held at Adelaide, South Australia, on August 30 and 31, and September 1 and 2, 1887

THE CALIFORNIA STATE MEDICAL SOCIETY held its annual meeting on April 20, 21, and 22, 1887, at San Francisco.

THE MEDICAL COLLEGE OF VIRGINIA at its Commencement on March 31st conferred degrees upon a class of fifteen.

THE ARKANSAS STATE MEDICAL SOCIETY meets at Little Rock on June 1, 2, and 3, 1887. The enterprising secretary, Dr. Gibson, has adopted the excellent plan of securing early pledges as to papers and attendance.

UNIVERSITY OF MARYLAND.—The medical department graduated a class of ninety at its Commencement on March 22d.

DR. J. F. HUNTLEY, of Oneida, N. Y., died on February 12th, in the sixty-third year of his age.

INTERNATIONAL MEDICAL CONGRESS.—Dr. J. J. Chisholm writes that "Dr. von Wecker, of Paris; Dr. Herschberg, of Berlin; Dr. Mauthner, of Vienna; and Dr. Landolt, of Paris, have accepted positions of vice-presidents in the Section of Ophthalmology. They promise to prepare papers and attend the meeting."

THE AMERICAN SURGICAL ASSOCIATION meets at Washington on May 11, 1887. Dr. Hunter McGuire presides, and an interesting programme has been prepared.

SOCIETY OF TRAINED NURSES.—The Agency for Trained Nurses on Thirty-fourth Street, which has been under charge of Miss Mabie, has been given up, and the work of supplying nurses transferred to the Philomena Society, No. 1,300 Broadway. This society is composed of trained nurses, and its objects are "to cultivate the science of nursing the sick in all its branches; to advance the character and honor of the profession; to promote friendly intercourse and good feeling among its members, and to assist as far as possible members in sickness and trouble."

THE MORTALITY IN AMERICAN LYING-IN HOSPITALS.—In connection with this subject, Dr. R. C. McDonald writes that, in the Boston Lying-in Hospital, out of three hundred and seventy-three confinements there were but three deaths, a percentage of .80. None of these deaths was from sepsis.

A JOURNAL is published in France devoted to the study of mesmeric phenomena. It is called *Revue d'Hypnotisme*. A recent number contains the description of a young woman who "beats the record" in the matter of continued somnolence, being now in her seventeenth year of uninterrupted lethargy. She is known as "The Sleeper of Thenelles."

IN PRUSSIA there are over one hundred and sixty centenarians, the oldest being one hundred and twenty years. —*Berlin Statisch. Korresp.*

MEDICAL MISSIONARY WORK IN CHINA.—We have received the following interesting items from Dr. J. C. Thomson, of Canton, China: "'The Medical Missionary Association of China' has just been formed, with Dr. J. G. Kerr, of the Canton Hospital, as president, several sectional vice-presidents, and Dr. E. M. Griffith, of Shanghai, secretary and treasurer. Its medical journal is expected to issue its first number about the last of March, of which there are four editors, Drs. Kerr, of Canton; Gulick and Reifsnyder, of Shanghai; and McKenzie, of Tientsin. On February 15th was opened the Woman's Hospital of Miss Dr. L. H. Hoag, at Chinkiang, in the presence of the United States and British Consuls, Tartar General, and other high officials. On February 17th the 'Alice Memorial Hospital,' in memory of the English wife of Dr. Hokai, was opened for the reception of patients of all creeds and nationalities. So China moves medically."

THE BROOKLYN HEALTH BOARD.—The Brooklyn *Eagle*, summing up the results of the Bacon investigation, says: "The Health Board is an organized brutality and imbecility."

THE SEVENTH ANNUAL MEETING OF THE ONTARIO MEDICAL ASSOCIATION will be held at Toronto on June 8th and 9th.

DR. MILNER FOTHERGILL, of London, will give three lectures on "The Modern Tendency of Disease" at his residence on Thursday, June 2d, 9th, and 16th, at 4 P.M. All members of the medical profession admitted on presenting their cards.

DR. GRANT BEY, of Cairo, has been made an honorary member of the Associazione dei Benemerite Italiana, and has received from the society the gold medal in recognition of his services to humanity.

THE ASSOCIATION OF MEDICAL EDITORS holds its next annual meeting at Chicago, on the Monday evening preceding the meeting of the American Medical Association.

IN A CASE OF OVARIAN TUMOR with ascites, occurring in a girl of twenty-two, Dr. A. G. Willey (*Cleveland Medical Gazette*) removed over half a ton of fluid (1,270 pounds) in thirty-one different operations, extending over two years. The patient weighed one hundred and ten pounds, and died after the thirty-first tapping.

LITERARY PIRACY.—The *Provincial Medical Journal*, an alleged monthly review of medical science, published at Leicester, England, contains among its original communications an article by Dr. W. R. Whitehead on "Hip-joint Disease," with a number of cuts, all taken bodily, without credit, from THE MEDICAL RECORD.

DR. FREDERICK M. DEARBORNE, Surgeon in the United States Navy, with the rank of Lieutenant-Commander, died last week. Dr. Dearborne was made Acting Assistant Surgeon August 18, 1862; Assistant Surgeon in 1864; and Passed Assistant Surgeon in 1867. In 1875 he was promoted to be Surgeon.

THE LONDON CORRESPONDENT of the New York *Times* criticises the loud tone of voice in which Americans talk, and illustrates it by the following incident: "I walked up Cheapside the other day with a young New York surgeon, just arrived, a very gentlemanly and polite man, and he explained to me as we walked some of the structural peculiarities of the eye as affected by cataract. It was not, as they say in Parliament, a contentious subject, yet my companion yelled so fiercely in explaining his meaning to me that practically everybody passing on both sides of the crowded thoroughfare turned to look at him. From time to time I hinted to him not to talk so loud. He then would moderate his voice for a sentence or so, then back it would go to a literal scream."

A NEW STATE INSANE ASYLUM.—At date of writing, it is uncertain whether the proposed new insane asylum for Northern New York will be located at Ogdensburg or Plattsburg. It is an interesting commentary on the management of these institutions that certain politicians are quarrelling each to have the asylum in his own locality.

CHOLERA AND THE STATE BOARD OF HEALTH OF WISCONSIN.—The Assembly of Wisconsin has passed a bill appropriating $15,000 as a contingent fund, to be used, if necessary, in the next two years by the State Board of Health in preventing the introduction of cholera into that State.

A PHYSICIAN CHARGED WITH MALPRACTICE FOR GIVING AN ORDINARY DOSE OF MORPHINE.—A Richmond, Va., physician was recently arrested, charged with having caused his patient's death by giving an overdose of morphine. The physician stated that he was called to see the patient, found her in great pain, and administered, hypodermatically, a quarter of a grain of morphia; in three-quarters of an hour, finding her still unrelieved, he administered, hypodermatically, a little less than a quarter of a grain. Soon alarming symptoms set in, and in a few hours, in spite of all treatment, she died. If this is the correct account, a manifestly great injustice was done; for medical practice could hardly be pursued, if the doctor were in danger of arrest when he gave half a grain of morphine. *The Southern Clinic* says that it was in evidence before the police-court that the patient had taken a certain amount of whiskey just before the administration of the morphia. In reference to the possible action of this agent in connection with morphia, Dr. Taylor, the coroner, testified that the alcoholic stimulant was antagonistic to the action of morphia, would retard its action, etc. *The Clinic* shows the error of this view, and cites the following authorities:

"Alcoholic stimulants often seem to intensify the toxic effects of opium or morphine."—*Waring's Therapeutics*, edition of 1886.

"In the treatment of opium-poisoning be careful of *alcohol*, for fear of *deepening the narcosis*."—*U. S. Dispensatory*, edition of 1886.

"Alcoholic stimulants are used by some habitues *to increase the effect of morphia*, which it does."—*Kane's Drugs that Enslave*, edition 1881.

CANCER is increasing in Victoria, Australia, the death-rate from it being 4.58 per 10,000 in 1880–84, as against 1.91 per 10,000 in 1861–70.

COLUMBIA COLLEGE was not as generous to the profession with her honorary degrees, on the occasion of her recent anniversary celebration, as Harvard was; the only two medical men on whom such degrees were conferred being Helmholz, of Berlin, and Dr. John C. Dalton, President of the College of Physicians and Surgeons of New York.—*Boston Medical and Surgical Journal.*

Some complaints have appeared, also, because in the arrangements for the Centennial celebration the Faculty and students of the medical department were not properly supplied with tickets.

A TUMOR OF THE CEREBELLUM was recently removed by Mr. Bennett May, of England. The diagnosis was correct, and the operation "successful" as an operation; but the patient, a boy of seven, died.

ANTITHERMIN is the name of the latest antipyretic agent. It is allied chemically to antipyrin, and its scientific name is phenyl-hydrazin-leonlinic acid.

STATE BOARD OF HEALTH OF NEBRASKA.—The bill proposing a State Board of Health for Nebraska has failed to pass the legislature.

REFORM IN SPELLING.—Professor Skeat, in a recent number of *Notes and Queries*, says: "Those who know the whole history of our spelling from the eighth century to the present time best understand the harm done by the pernicious system of trying to transplant Latin and Greek symbols into the English language. The symbols *æ* and *œ* are not English, and are best avoided. Indeed, this is done in practice when once a word becomes common. *Æther* and *æthereal* have been sensibly replaced by *ether* and *ethereal*. No one now writes *æternal*. *Solœcism* is now *solecism*, and I trust that *primeval* and *medieval* will soon prevail over *primæval* and *mediæval*. Pedantic spellings are most objectionable, because they are useless and unphonetic." To this the *British Medical Journal* adds: "We heartily agree with Professor Skeat, and trust that *diarrhœa*, *leucorrhœa*, *dysmenorrhœa*, etc., will soon give place to *diarrhea*, *leucorrhea*, *dysmenorrhea*, etc." We can ourselves add a little illustration of some peculiari ies in medical orthography:

A man once caught typical phthisis
By being exposed to the bhrhisis;
So he, cold death to foil,
Took some cod-liver oil,
Which instantly brought on emhisis.

If such an illustration is insufficient, a study of any medical dictionary justifies the following:

A young man with a very marked ptosis,
Once met a sweet girl who sold prosis,
Said she, "Will you try
Some flowers for your eye?"
But he answered her pleasantly, "Pno, sis."

INVESTIGATING LEPROSY IN AMERICA.—The Norwegian Governnent has taken another step toward discovering the origin and nature of leprosy, which is so common on the west coast of Norway, by despatching Dr. G. A. Hansen, Director of the Leprosy Hospital at Bergen, to North America, for the purpose of inquiring into the heredity of the disease among Scandinavian emigrants to the United States.

MEDICAL WORK is closely allied with charitable work, and physicians will be both interested and profited by a knowledge of the results of the investigations of charity organization societies obtained in Boston and New York. These show that in large cities the proportions of worthy and unworthy applicants for relief is very nearly a fixed one, and that a general law can be laid down, which is as follows: Among one hundred applicants for charity there will be found nine worthy of continuous relief; twenty-two worthy of temporary relief; fifty-four needing work more than relief; fifteen unworthy of relief; this is the result of an investigation of 16,496 cases.

PHASEOLI VULGARES, as they say in Boston, or baked beans, is the subject of a learned essay by Dr. Ephraim Cutter in the *Albany Medical Annals*. Dr. Cutter finds that baked beans are indigestible because the starch-granules are enclosed in an adamantine coat of cellulose, which is not destroyed by cooking. When properly cooked, however, the bean is a very nutritious food. Dr. Cutter, without intention, does not do the bean full justice, for he leaves it to be inferred that the chief nutritive ingredient is starch, whereas it really has a larger amount proportionately of nitrogeneous matter (legumine) than other vegetables. White beans contain 55 parts of starch, + 25 parts legumine, fat 2.8, giving a nutritive ratio of 1 to + 2, or about the same as that in perfect and normal food milk.

Reports of Societies.

NEW YORK ACADEMY OF MEDICINE.

Stated Meeting, April 21, 1887.

A. JACOBI, M.D., PRESIDENT, IN THE CHAIR.

THE PRACTICAL VALUE OF OUR PRESENT METHODS OF TREATING THE UPPER AIR-PASSAGES.

THE Section on Laryngology and Rhinology presented the above subject for discussion, and papers were read by Drs. F. H. Bosworth, Andrew H. Smith, W. H. Thomson, H. Holbrook Curtis, and W. C. Jarvis (see pp. 487–495).

THE PRESIDENT acknowledged the donation to the Academy, by Dr. Andrew H. Smith, of

AN AUTOGRAPH LETTER OF RUDOLPH VIRCHOW,

written in 1866, and containing a biographical sketch of himself.

A like presentation had been made to the Academy by Dr. Allan McLane Hamilton, consisting of a manuscript in the handwriting of

JULIEN BOUVIER,

who was practising in New York in 1796. The letter was dated August 4th of that year, and was addressed to Alexander Hamilton, Secretary of the Treasury of the United States. The subject was *A Medical Inquiry into the Use of Cold Water in Malignant Fevers, especially Yellow Fever.*

The President also contributed a manuscript by

ERNST KRACKOWIZER,

with reference to the reorganization of Bellevue Hospital in 1874.

He then spoke of the great value of a large collection of similar manuscripts, a gathering which would finally become invaluable on account of their rarity and intrinsic worth. He asked as a favor to the Academy that such manuscripts be presented to the Library.

The Academy then adjourned.

SECTION IN PRACTICE.

Stated Meeting, April 19, 1887.

E. DARWIN HUDSON, M.D., CHAIRMAN.

DR. ANDREW H. SMITH read a paper on the

SYMPTOMS, PATHOLOGY, AND DIAGNOSIS OF ACUTE OPIUM-POISONING,

in which he confined himself to the consideration of the grade of opium-poisoning which threatens the life of the patient, or causes solicitude to the practitioner. The *symptoms* are generally so distinctive as to leave but little room for error. The intellect is usually almost wholly dormant. The patient may be aroused, but immediately passes into his former condition. In a few cases active delirium occurs. One of the most constant symptoms of opium narcosis is *contraction of the pupil.* Contraction of the pupil, however, should not be allowed too great weight in diagnosis. Unless other symptoms point to a like conclusion it should not be accepted as indicating opium-poisoning, and it must also be borne in mind that as death is approaching the pupils become generally widely dilated.

The *respiration* is very commonly reduced in frequency. The most dangerous narcotism, however, may be developed while the respiration is

AT OR NEAR THE NORMAL FIGURE.

Doubtless, if the rate of respiration were always noted in reports of cases of opium-poisoning, such cases would not be very rare. Dr. Smith thought that this fact was first brought to the notice of the profession in a paper which he read before the Medical Journal Association in New York in 1875. The fact that such cases may occur renders it extremely important that absolute reliance should not be placed upon the respiration to sound the note of warning as danger approaches in the plan of treatment of certain diseases of which opium plays a prominent part. The contraction of the pupil and the effect upon the intellect will serve to put the practitioner upon his guard.

After referring to the *post-mortem* appearances, in which there are no specific lesions, and also to the pathology of opium-poisoning, Dr. Smith passed to the question of *diagnosis*, where he gave the differential points between

OPIUM-POISONING AND APOPLEXY,

such as inequality of the pupils in the latter and equal contraction (as a rule) in the former; inability to rouse the patient in the latter with ability to excite reflex movements, while in the former reflex movements cannot be induced, although the patient can be momentarily aroused; evidence of hemiplegia in the latter which are absent in the former, etc.

Uræmic coma lacks the characteristic pupil of opium-poisoning, and in *alcoholic* intoxication the pupils are not contracted.

The *prognosis* in opium-poisoning is extremely favorable if efficient treatment is employed. Persons have been rescued after the respiration had fallen as low as one in two minutes. Persons have recovered after taking five, six, and even eight ounces of laudanum. While, therefore, a sign of life remains, efforts at resuscitation should not be relaxed.

It is well known that in cases of *defective elimination by the kidneys* opium may cause dangerous or even fatal narcotism, when given in doses that would be considered trivial under normal conditions. The danger of using morphine when the system is under the influence of chloral, should also always be borne in mind.

The *treatment* may be considered under the following heads:

1. Evacuation of the stomach. (Tartar emetic should never be used, and ipecac acts too slowly.)
2. Administration of certain drugs, which are in some degree antagonistic to opium. (Nitrite of amyl, oxygen, coffee, and belladonna.)
3. Efforts to arouse the nervous system. (Flagellation, but not bruising; walking the patient; dashing cold and hot water alternately over the head and face; faradism, touching the tip of the nose or the rim of the ear.
4. Efforts to maintain respiration. (Artificial respiration, electricity applied to the phrenics in the neck, etc.)
5. Efforts to keep up the circulation and temperature.

In connection with this point he referred to a paper by the late Dr. Gaspar Griswold, who showed that, in using electricity to stimulate the heart's action,

EXCESSIVE STIMULATION OF THE PNEUMOGASTRICS

tended to arrest cardiac action.

The withdrawal of a pint or more of blood from the veins and its replacement by a similar quantity of either milk or a saline solution, would be a rational method of getting rid of a portion of the poison circulating in the vessels, but Dr. Smith could not see any utility in adding a pint of milk to the undiminished bulk of the blood, as was unsuccessfully done by Dr. Gilliam, of Columbus, O., in a case reported by him a year or two ago in a St. Louis Journal.

DR. W. H. THOMSON spoke of the importance of recognizing the condition present, after the diagnosis had been made of opium-poisoning. He thought that the routine treatment was frequently to the detriment of these unfortunates, simply because what were supposed to be antidotes were remembered.

NEUROTICS HAVE NO ANTIDOTES.

All that could be expected, therefore, was that certain dangerous effects might be counteracted by the action of neurotics, to a certain limited degree and no more.

Probably no two cases of opium-poisoning were alike, nor would they be alike in the same person at different times. The same was true of chloroform. A woman with peritonitis bore chloroform badly; but in parturition she bore it almost without danger; while the same person in the dentist's chair might succumb instantly to the influence of the drug.

When called to a case of opium-poisoning, therefore, the exact condition of the patient should be studied with special reference to whether that condition could be counteracted by this measure, or that. He would look for indications somewhat as follows:

Are the cardiac stimulating effects of the drug still present or not? If the pulse was full and strong the patient was quite certain to recover. But in many patients depression of the heart, present previous to the taking of the opium, does not allow the drug to exercise its stimulating effect, and there is a weak pulse, and the indication then is for *the immediate use* of nitrite of amyl, nitro-glycerine, and oxygen, and with these belladonna. In one case he gave *twenty* drops of the tincture of belladonna every fifteen or twenty minutes until *four* drachms had been taken, and with marked benefit. He prefers the belladonna to hypodermatic injections of atropia.

But the cases which are dangerous are those in which belladonna is useless, if not injurious. The pulse has lost its strength, respiration is shallow, change cannot be produced in the pupil, the surface is cold and pale, and the perspiration is cold. In these cases do not try belladonna. Nor did he like to overstimulate with caffeine, for caffeine in large doses depresses respiration. In such cases, then, nitro-glycerine and nitrite of amyl were indicated, and also electricity.

But he would

WARN AGAINST THE USE OF ELECTRICITY

about the nostrils or throat, because all applications of that kind, including ammonia, to these parts slowed the respiration in health. On the other hand, the surface of the chest down to below the diaphragm should be faradized. One pole may be placed upon the nape of the neck, and the other passed over the precordia and down over the region of the diaphragm.

Dr. Beverley Robinson reported a case occurring in St. Luke's Hospital, in which there was generalized pulmonary emphysema, chronic bronchitis, enlarged heart, acute mania, and morphine-poisoning. The last-mentioned condition was treated with injections of atropine, artificial respiration, black coffee, the faradic current, and inhalations of oxygen. The patient was a man, sixty-eight years of age, and the case terminated fatally. The patient was also seen by Drs. Andrew H. Smith and James R. Leaming. After giving a detailed history of the case, Dr. Robinson made the following remarks:

"In reviewing this case I would add merely that it appeared to me, at the time, the patient was evidently suffering from the effects of an over-dose of morphine, and that he received as much benefit in starting the respiratory movements from

ARTIFICIAL RESPIRATION

as from the intelligent use of the faradic current. The battery employed was the small portable one of Gaiffe, in which the bisulphate of mercury is used as a chemical agent to start the current. An important observation of Dr. Smith's and of myself was that one pole of the battery could be employed with equal efficiency and less danger over the lower jaw and lobule of the ear than over the side of the neck, where the pneumogastric might be unduly stimulated, and thus, perhaps, occasion the sudden and complete arrest of the heart's action. This seems to be in accord with the conclusion arrived at by the late Dr. Gaspar Griswold, with respect to the use of electricity in morphine poisoning, who states (The Medical Record, February 28, 1885, p. 245) 'that under no circumstances should an electrical current, sufficiently strong to produce contractions of the muscles in any part of the body, be applied over the phrenic or pneumogastric in the neck.' It is also in accord with his statement (*Ibid.*, p. 246) that he would, under analogous conditions with those mentioned in the history of my case, rely more upon artificial respiration than upon electricity; in fact, this distinguished young observer remarks that in those cases 'in which morphine had entered a vein he would not use electricity at all.' That electricity may be applied, however, in these cases so as to stimulate respiration, and without at the same time occasioning any dangerous depressing effect, is obviously proven by the wise use made of the faradic current in the hands of Dr. A. H. Smith. I would also mention that even after the hypodermatic injection of one twenty-fourth of a grain of atropine, in all, there was no dilatation of the contracted pupils. Was our case one of those which succumb to the *secondary exhaustion* brought on by an an overdose of morphine? I scarcely believe so in view of the other complicating affections from which my patient previously suffered."

Dr. F. A. Castle spoke of the importance of estimat the condition of the patient in each individual case. A considerable number of cases occur accidentally in those who are the subjects of chronic alcoholism. This class of cases give poor results from treatment. In suicidal cases the persons for the most part have as previous conditions, due to various causes, fatty hearts or disease of the lungs, with limited respiratory power, and in such cases the chances of recovery are comparatively small, and in proportion to the damage they have received from other poisons or previous diseases.

In persons who are not suffering from chronic alcoholism, etc., the chances of recovery are much better. But besides these, there are certain other conditions which require careful consideration, as already stated by Dr. Thomson, before resorting to

THE ROUTINE PLAN OF TREATMENT.

He believed that considerable caution should be enjoined in the use of atropine, lest thereby another source of danger was given to the patient.

Dr. H. B. Millard then read a paper [see p. 484] on

THE BEST TESTS FOR ALBUMIN,

with practical remarks relating to urinary examinations.

Dr. W. Mendelson had devoted much time to the making of urinalyses, and had reached the conclusion for himself that the method of boiling and then adding acid was relatively the best test for albumin that could be used. His method was to boil the upper portion of the urine in the test-tube, and then add a drop of acetic or dilute nitric acid. He regarded it as important to first boil the urine and then add the acid. By this method an excess of nitric acid would not dissolve the albumin. The substance most liable to be mistaken for albumin was mucin. He believed it to be doubtful whether exceedingly small traces of albumin were pathological. A point which he obtained from Dr. John G. Curtis, and which he looked upon as a valuable one, was the fact that albumin was generated in urine by the death of bacteria. In all cases where only very slight traces of albumin or of doubtful substance can be found, a microscopical examination of the urine should be made, and may materially aid in deciding whether or not

ALBUMIN IS PRESENT.

Dr. Charles A. Doremus said it was important to *first* ascertain the reaction of urine submitted for examination. In the second place, the urine should be perfectly clear; and to accomplish this precipitation was preferable to filtration. He believed it to be wise to use a corroborative test, whichever of the numerous tests might be adopted. The ferrocyanide test, if properly applied, he regarded as sufficiently accurate. Heat was a delicate test, but it was very apt to be used too hurriedly. The nitric acid, also, was extremely delicate.

Dr. George B. Fowler also spoke of the great importance of first ascertaining the reaction of the urine, and he indorsed the method mentioned by Dr. Mendelson, namely

BOILING FIRST AND THEN ADDING A DROP OF ACETIC OR ANY OTHER DILUTE ACID.

Heat does not precipitate albumin in alkaline urine, and too much acid will give the same result. Alcohol would clear up certain precipitations, with watery solutions, but in urine it would not answer. The best method he had employed for *filtering* urine was through thoroughly washed sand.

Dr. W. M. Carpenter doubted if such slight traces of albumin in urine as four one thousandths of one per cent. had a special clinical significance in the midst of so many external influences—and also internal, independent of renal disorders—that give rise to the transient presence of small quantities of albumin in the urine. At the same time, it was a wise precaution to keep such cases under observation. As to bacteria developing albumin, he had always declined to give an opinion concerning the presence of either albumin or casts when the urine was well charged with bacteria, and asked for another specimen. Urine that contains casts may become

FREED FROM CASTS AS BACTERIA MULTIPLY.

Heat and nitric acid were the tests for albumin on which he had relied.

Dr. Robert J. Devlin mentioned a filter which he had prepared by pouring upon it a freshly made precipitate of magnesia, obtained from dilute solutions, so that it may be as finely divided as possible. When the filter is thus coated with a thin gelatinous deposit, carefully add the urine—either the entire sample or the lower stratum simply, in such a way as to disturb the film on the paper as little as possible. Then scrape off the entire deposit while moist, and mingle in a test-tube with sufficient very dilute nitric acid to clear up the magnesia. The organized deposits can thus be obtained in a very concentrated condition for microscopical examination.

Dr. A. H. Smith had had satisfactory results from the use of picric and citric acids.

Dr. W. G. Thompson thought that the most accurate and delicate test was one which could be most easily applied, and that was boiling the urine first and acidulating it afterward. He preferred reflected to transmitted light in examining the specimen while the test was being applied.

Dr. F. J. Bowles had found that nitric acid would in some instances precipitate albumin when heat and nitric acid would not.

Dr. Fowler remarked that there were specimens which yielded a precipitate to nitric acid, but would not to heat, and *vice versa*, so that in each instance both heat and nitric acid were the most delicate respectively.

The Chairman asked if granular casts had been found in the urine without albumin being present at any time.

Dr. B. Robinson had seen kidneys that were the seat of chronic diffuse nephritis, in which repeated examinations detected both albumin and casts, and afterward neither the one nor the other.

Dr. Millard had met with a number of instances where albumin had been absent, and yet granular casts were found, and he believed that albumin might appear in the urine without disturbance of the uriniferous tubules. He had long since discarded the picric-acid test. Peptones and protein bodies would not always disappear under heat. Heat and nitric acid were very delicate tests for chemists, but he thought that they were less likely to prove so for the general practitioner. Heat was the most available of all tests, doubtless, if all precautions were observed. That casts would disappear when bacteria were present was a new point to him.

The Section then adjourned.

NEW YORK NEUROLOGICAL SOCIETY.

Stated Meeting, March 1, 1887.

Charles L. Dana, M.D., President, in the Chair.

Dr. H. M. Biggs reported a case of

ALCOHOLIC PARALYSIS DUE TO MULTIPLE NEURITIS.

The patient was a married woman, twenty-five years of age, who had been a moderate drinker. About six weeks before death she began to have pains in her legs, followed by weakness, and she rapidly developed a painful, wasting paralysis, involving the legs chiefly and the arms slightly. In the lower extremities there were hyperæsthesia, paræsthesia, and reaction of degeneration over affected muscles. The extensors were most involved. There was no implication of the bladder or rectum. The temperature on admission to the hospital was 100° F. The woman died of intercurrent pleurisy.

Autopsy.—Patient greatly emaciated. Legs and thighs markedly flexed. Muscles of the legs of a yellow color, and apparently converted almost entirely into fat. Muscles of thigh much less affected. Spinal cord and nerve-roots and -trunks normal in appearance.

Microscopical appearances.—Spinal cord apparently normal, with the exception of slight sclerosis in the columns of Goll in the cervical region. Nerve-roots normal. In one of the sacral nerves before its exit from the spinal canal was found a marked increase in the endoneurium, with diminution in the number of the nerve-fibres, and an irregularity and indistinctness in these appearances. The right sciatic nerve showed the same changes more marked. In the posterior tibial nerve the process was even more advanced, and in this only an occasional nerve-fibre could be detected. Microscopically, the gastrocnemius was composed almost entirely of adipose tissue; only here and there atrophied muscle-fibres were found. The small nerve-trunks in the muscle showed advanced degenerative neuritis, with comparatively little new growth of connective tissue in the nerves.

The President thought that in this case it had been fully demonstrated that the alcoholic paralysis was due to a neuritis, and not to a myelitis. This was the first case with autopsy presented in this country.

Dr. M. A. Starr had seen the specimens, and said there was no question with regard to the existence of neuritis, in this case, and the normal condition of the anterior cells of the spinal cord. There was slight sclerosis in the columns of Goll, which he was unable to explain. The same condition had been observed in a case of Hamilton's recorded by Granger Stewart.

Dr. Biggs said that, contrary to the ordinary condition found, the process seemed to be more a degeneration of nerve-fibre than an interstitial neuritis, especially in the smaller nerves.

Dr. Noyes spoke of the frequent occurrence of amblyopia with alcoholism, and said it was due to a partial neuritis of the optic nerve, referred, as had been shown, to the centre field, and not to the field at large. He suggested that in cases like the one reported by Dr. Biggs the neurologists should make careful examination of the optic nerves. In reply to Dr. Starr, whether scotoma was due as frequently to tobacco as alcohol, he said it might be due to either, but the patients frequently combined the two habits.

The President said the name alcoholic paralysis was in some cases rather begging the question; this patient, it seemed, had been only a moderate drinker. He had observed other cases in which the alcoholic element was small.

ABSTRACT OF DR. STEVENS' PAPER ON IRRITATIONS ARISING FROM THE VISUAL APPARATUS CONSIDERED AS ELEMENTS IN THE GENESIS OF NEUROSES.

Two classes of influences were recognized as causes of functional nervous disorders—the remote and the im-

mediate. The remote causes may be sufficient to perpetuate a neurosis when once a nervous irritation has been instituted. While immediate causes rarely induce long-continued disorders, a pre-existing influence may serve to continue it indefinitely. It is of little practical importance that some exciting circumstance has given rise to a nervous trouble. The event has passed and cannot be recalled. If there is an underlying cause it is of much more importance.

Persons in whom underlying causes of a neurosis exist are said to possess a neuropathic predisposition, and those subject to it are liable, from trifling immediate causes, to suffer from various neuroses. In a considerable proportion of cases the neuropathic tendency is hereditary; but the result is not always manifested in the same form in different generations.

A third class of cases which should be recognized may be designated as *modifying tendencies*, among which may be mentioned vitiated atmosphere, the period of life, and the performance of certain physiological functions.

Often, as a result of the predisposing influence, when one form of complaint is supposed to be cured, the subject of it is simply suffering from some other form.

Must the predisposing cause of neurosis be general, pervading the whole organism, or must it of necessity be located in the great nerve-centres, or may it be entirely local and outside those great centres? Undoubtedly it may be local, and confined to any portion of the nervous system.

Inasmuch as the tendency is often hereditary, may not the evil consist of some peculiarity of anatomical structure or of physiological adaptations which are inconsistent with the most regular and easy performance of the function of a part or parts, and may not certain classes of mechanical peculiarities be unusually liable to become factors of physiological disturbance?

If we answer in the affirmative we assume a hypothesis which must be maintained by long-continued observations, conducted in a spirit of judicial independence, and free from the bias which might result from occasional and exceptional experiences. The conclusions announced this evening are based upon observations in more than five thousand cases in private practice, and of a considerable number in public institutions, all of which have been made with as much precision as the exacting demands of an active professional life would permit. The central truth, as arrived at by these observations, may be stated as it has already been done in a memoir to the Royal Academy of Medicine of Belgium, in 1883, as follows:

"Difficulties attending the functions of accommodating and of adjusting the eyes in the act of vision, or irritations arising from the nerves involved in these processes, are among the most prolific sources of nervous disturbances, and, more frequently than other conditions, constitute a neuropathic tendency."

In the proposition all causes of nervous irritation are recognized. It is held that the influences indicated are pre-eminent, but not exclusively permanent causes. Let it be remembered that it has been universally conceded that the nature of the neuropathic tendency is unknown. If one pre-eminently important element is demonstrated, it is not to be rejected because it may not include the whole.

The speaker proposed only to illustrate the result of his experience by exhibiting some photographs of cases of notable neuroses which showed very remarkable changes of physiognomy, such as habitually occurred when certain hurtful tensions of the ocular muscles were relieved. If he had designed to present only the most remarkable cases of the class to which these belonged, he should have chosen only a few of them. The design was, however, only to show by these contrasting photographs the very notable improvement which, in obstinate, and by ordinary means hopeless, cases of the most important neuroses, might be expected from relief from certain hurtful tensions of the eye-muscles.

The portraits were in pairs, the first having been taken at the commencement of treatment, the second at a later period—the interval being, on an average, about one month. The first series represented cases in his private practice; the second series, cases which were under his care for a short time, at the Willard Asylum for the Insane, last summer. The first series had been made by various photographers; the second, by Dr. P. U. Wise, Superintendent of the Willard Asylum. Thirteen pairs of photographs were exhibited—nine of the first and four of the second series. In all these, very striking contrasts existed between the first and second portraits.

In No. 1, a weary and listless young girl, a sufferer from headache, and who had never been able to attend school, is seen to be transformed, in twelve days, into a vivacious and thoroughly awake child, following relaxation of each of the inner eye-muscles. The change in health was marvellous. In No. 2, an epileptic girl, whose vacant gaze and half-open mouth indicated a profound degree of dementia, within a single month put on an appearance of robust health and of lively intelligence. In another case, a boy, choreic from infancy, and imbecile, whose constant movements were too rapid even for the modern photographer, showed, in the second photograph, from which the distortions of the face and wrinkles in the skin had disappeared, a clever mental state.

The speaker related in brief some of the results of a short season among the most hopeless cases of the Willard Asylum for

THE INSANE.

Two of these hopeless cases, who had during the month preceding treatment directed to the eye-muscles been subjected to about one hundred and seventy convulsions, suffered only about forty convulsions in the month succeeding that treatment, notwithstanding the withdrawal of all bromides.

FIFTY PER CENT. OF EPILEPTICS

so treated had remained well for a length of time varying from many years to only a single year, but sufficiently long to indicate that a great change had been wrought. Thirty-two per cent. had received very marked relief, but little short of absolute cessation of the complaint. They were all better without drugs than they had formerly been with. In seventeen per cent. no good results had been obtained.

The speaker thought that, with a better understanding on his own part of the extremely complicated conditions of the ocular muscles often found in epilepsy, this record could be improved.

The methods of procedure in examining for muscular defects was given. It differed radically from that proposed by Graefe and generally adopted, and from other methods which had been suggested. His method of performing tenotomy was also described.

DR. E. C. SEGUIN said, with regard to the etiology of neuroses and serious mental disorders, that he thought we ought to look a great deal deeper than the exciting and superficial causes which occurred in many cases of that kind. In epilepsy and chorea, for instance, he thought we had to look for the efficient cause, not in disturbed external apparatus, but to hereditary predispositions and faulty tendencies. That faulty external apparatus would cause more attacks, or possibly aggravate the mental disorder, he thought no one would deny; consequently the optic apparatus, the genital apparatus, etc., should be put in perfect order. As to the great improvement after tenotomy in epilepsy, the records of surgery and medicine were filled with cases in which trauma of various kinds had interfered with epileptic manifestations for months, or even years. It seemed to him the report of a case within six months after tenotomy was rather premature. He referred to one of his cases of epilepsy,

recently submitted to division of the ocular muscles, the bromides at the same time being withdrawn, and three days later she commenced to have from six to twelve convulsions in the twenty-four hours—more than she had ever had before the operation. He had had patients go three years without an epileptic attack, and then have a relapse.

Dr. H. D. Noyes thought the precise ocular conditions in the cases reported should have been recorded; perhaps they were in that part of the paper not read. He had with him exact records of a number of cases of ocular trouble, with the result of treatment. It had not fallen within his experience to meet with the class of cases referred to by Dr. Stevens. He dwelt upon the importance of making a thorough ocular examination, including that of the muscles of the eye, in every case. He had come to realize more and more the importance of insufficiency of the external recti. He had obtained benefit in many cases from prisms. He spoke of the method of examination and of performing tenotomy. The paper deserved the most careful consideration.

Dr. D. B. St. John Roosa said that the real point in the paper was, he thought, that the correction of errors of refraction, improper relation between the ciliary and internal recti muscles, and other deviations of the ocular muscles, was capable of curing constitutional disease. He took it that epilepsy was a constitutional disease, and not merely a functional disturbance. The same was true of chorea. The question was, Did these operations cure epilepsy and chorea? But it had been shown that people with chorea got well without ever having errors of refraction corrected. It had also been shown that the vast majority of people who were not myopes were hypermetropics, yet suffered no inconvenience from it. In this the author's second paper another step had been taken—namely, that these constitutional diseases, epilepsy and chorea, were due, not solely to errors of refraction, but to want of co-ordination between the recti and ciliary muscles. Then the prism-test came upon the field, and we had to exercise the ocular muscles by prisms. Then in the order of advance came the doctrines taught in the paper of to-night. Granting the claims of the paper, that the patients had for a time after correction of an ocular difficulty been greatly relieved, possibly cured, yet that was a long way from assuming that the ocular disturbance, whatever it was, was the cause of the epilepsy. Many great men having strabismus had not become choreic, epileptic, nor insane.

Dr. A. L. Ranney thought that, following the exhibition of the photographs, little need be said in confirmation of the views advanced by Dr. Stevens. The photographs were so startling that they would be accepted in any court of justice by an unprejudiced jury as proof that unmistakable benefits had been derived from the treatment. He had personally seen and examined several of the cases, and he considered the published histories as decidedly underestimated. Dr. Ranney had performed the operation for the relief of ocular insufficiency nearly two hundred times, and had carefully examined the condition of refraction and accommodation, as well as that of the ocular muscles, in several hundred subjects afflicted with various forms of nervous disease. He did not pretend to pose as an oculist, but as a neurologist. Originally he was a sceptic, but his scepticism became no longer tenable when he saw a choreic and epileptic imbecile, in Dr. Stevens' office, who was perfectly restored in a short time to health and mental sanity by the method he had described. He thought the paper would tend to establish a new era in neurology. Regarding the operation, in no case had he had bad effects from it, but the treatment required careful regard to detail.

Respecting the view that the eye is an important factor in creating and prolonging the so-called "neuropathic predisposition," the following facts were pertinent: 1. No one has yet shown in what this predisposition lies; hence, if Dr. Stevens has shown that eye-defect is an important element in these conditions a great advance has been made. 2. There is no recognized pathology in functional nervous diseases. 3. Heredity is very common in these affections. 4. My records, in common with those of Dr. Stevens, go to show that eye-defect is found in a very large proportion of such subjects. 5. Many of the eye-defects found can be shown to be congenital, being inherited like feature. 6. The manifestations of the neuropathic predisposition vary with each case, and are called forth often by trivial circumstances which are too frequently regarded as of great clinical interest.

In the treatment of the severer forms of functional nervous disease—for example, in chronic epilepsy—one radical cure without the aid of drugs offsets a thousand failures as a proof of the scientific value of a discovery. Dr. Stevens had seven cases free from epileptic seizures for more than five years after tenotomy of the eye-muscles, and without the aid of drugs. This could not be explained by chance. Then the records of the Willard Asylum were hard to contradict.

During the past year and a half he had seen sixteen epileptics in private practice; in only one was no defect in the eye-muscles found. He had an opportunity to operate on the eyes in eight of the cases—three of these were cured; two had had no fits for over a year; in the five cases still under observation the attacks had been lessened in all, drugs having been withdrawn. One had been reported by Dr. Stevens. In headache and neuralgia he had had some very remarkable results from tenotomy of the eye-muscles; also satisfactory results in hysteria and hystero-epilepsy.

Dr. Hermann Knapp said his practice had not brought him much in contact with people who had neurotic conditions, and most of those whom he had seen had passed into other hands. He was very much surprised to learn that there was so high a percentage of ocular difficulties in the patients Dr. Stevens examined in the asylum. He thought nervous people generally showed not only one complaint. Many people, especially young ladies, who suffer from headache, etc., cease to complain after correction of a deviation of the eye-muscles, etc. He had listened with the greatest attention to Dr. Stevens, and he felt quite sure that his work was not only legitimate, but that it was highly promising. He was only afraid we would not be spared disappointments in that line of treatment.

Dr. Gruening said his experience had been very much like that of Dr. Knapp. He always examined for muscular defect, and said that when one placed a prism before the eye it disturbed binocular vision. For the correction of this apparent muscular defect an operation was performed, but the muscle was sewed to its original place, or the lateral attachment was not divided; and this was only the simulation of an operation. He had benefited many patients by cylinders.

Dr. Stevens, in closing the discussion, said there was no suggestion in the paper regarding cures. He did not believe in cures. Take away the cause of the trouble and they got well. If the patients could not be said to be cured, it was still a very fortunate thing that they had got rid of their chorea, epilepsy, etc.

Bicarbonate of Sodium in the Treatment of Gonorrhœa.—It is now generally admitted that gonorrhœa is a parasitic affection. Observation seems to prove that the parasite can only exist in an acid medium, and the injection of non-irritant alkalies naturally suggests itself. Before commencing treatment, Dr. Costellan ascertains by means of litmus paper the acidity of the pus—a sure indication of the nature of the affection. He uses a one per cent. solution of bicarbonate of sodium, to be injected three or four times daily. From seven to eight days' treatment is generally sufficient to procure a marked diminution in the quantity of discharge, and convalescence is rapid. The injections at once relieve the scalding which accompanies micturition.—*The London Medical Record.*

Correspondence.

LOCAL TREATMENT OF DIPHTHERIA.

A Note from Professor J. Lewis Smith.

To the Editor of The Medical Record.

Sir: When Dr. Jacobi writes on diphtheria, as indeed on any other subject, his remarks extend our knowledge and abundantly repay perusal. I read with great satisfaction his recent paper on diphtheria, until I came to the sentence recommending emetics, and especially the following sentence: "When Dr. J. L. Smith quoted me as having advised the inunction of mercurial ointment into the region of the larynx, he mistook my meaning." I am sorry that one who has contributed so much to pædiatric literature should find his views on diphtheria quoted wrongly. I cannot now remember in which journal I saw his remarks, which I looked over more than once. I will endeavor to find them when time permits. The mistake may have been with the reporter, who, at the society meetings, if there happen to be any unusual noise, as by the entrance of members, does not always catch the meaning. The late Dr. Peaslee, who will long be remembered in New York for his interesting, instructive, and pertinent remarks at our evening meetings, once said to the writer that he took little pleasure in seeing his opinions in print, on account of errors made by reporters. But he excepted in his general condemnation of reporters the one who has since, in the editorial chair, raised The Record to its present high position among the journals of this country. So Dr. Jacobi's wrongly understood remarks were probably not seen in The Record.

It was certainly gratifying to physicians, who wish to extend and establish in this country the best possible treatment of diphtheria, to observe how, at the recent discussion, with one exception, mild and unirritating, but frequent and efficient antiseptic applications to the local disease were recommended. Did I not know that the columns of The Record are overcrowded, and much matter excluded through want of space, I would be glad to extend my remarks. But allow me one word in reference to the instruments used for local treatment. Those most frequently used are the bulb with stem attached, the small syringe, glass or gutta-percha, various forms of atomizers, the probang, and camel-hair pencil. I will state my experiences with these instruments. In treating the nostrils we all agree that the solution should be used warm and as often as every second hour, if there be evidence of a nasal pseudo-membrane. The mixture employed should be antiseptic and non-irritating. The bulb with attached stem answers for this purpose, if the head be thrown back, but the stem presses against the nasal orifice, and if this, as is often the case, be inflamed and tender, it causes stout resistance on the part of the child, and in the struggle there is risk that the wash be thrown into the eyes, unless they are covered. If the slender and straight point of the medicine-dropper be substituted for the large and blunt stem, the application can be made with less pressure and less resistance. For infants under the age of eighteen months the hand-atomizer, as found in the shops, if the point be straight and the bulb be of large size, answers the purpose, but with this objection, that two or three compressions of the bulb and as many removals to fill it will be required for each nostril. The instrument holds nearly one drachm. I have used various syringes with tapering and bulbous nozzles, and Delano's hand-atomizer as employed by Dr. Billington. The objection to the latter is that the sharp point is very apt to prick the nostril and cause bleeding if the child resist and rotate the head. In former times I prevented this accident by drawing india-rubber tubing over the point. But I believe that the best of all hand instruments in the treatment of nasal as well as pharyngeal and laryngeal diphtheria is one constructed upon the principle of Millard's atomizer, not the one with long slender point, which bears this name, but with a bulbous end. This can be used when pressed lightly on the nasal orifice, throws a heavy spray which flows through the opposite nostril, even when the head is erect, and washes the fauces with only two or three compressions. In the treatment of laryngeal diphtheria by the ordinary atomizer, I have reason to think that much of the liquid is caught upon the tongue, but this does not occur in the use of Millard's atomizer, since the bulb acts as a tongue-depressor. The steam atomizer also has an important use in the treatment of the various forms of diphtheritic inflammation.

Yours truly, J. Lewis Smith, M.D.

SHOULD PREACHERS PAY?

To the Editor of The Medical Record.

Sir: Every now and then some doctor, with a queer notion of the dignity of his profession, insists, through the columns of The Record, that preachers ought to be charged fees for medical services rendered them. If the gentleman will allow me, I should like a word with him.

It seems to be your idea then, doctor, that, not getting a fee, you receive nothing at all for such work; that it is so much charity done, and that, too, where the recipient is no object of charity. We plead guilty, in the preacher's name, to the last specification. He is no object of charity, and though I don't profess to be able to speak for all who wear the badge of the profession, I feel that I may confidently answer for the very great majority of ministers of the Gospel, when I say that if there was no question involved but a mere one of dollars and cents, they would scorn your services upon such terms. They know, however, this custom is justified by the precedent of ages upon ages gone by. They know, too, that it is one which will hold for ages yet to come, and that it originated and has been fostered in the hearts of good men in medicine, who not only did it cheerfully, but who have felt it a privilege to do it—not, possibly, recognizing any peculiar claim upon them from ministers as men, but upon the much higher consideration of respect for the cause in which these men are engaged, and a desire to aid them in it. They honor the man "for the work's sake."

But is it really true that you get nothing back? If you appreciate the benefits Christianity bestows upon a country sufficiently to have it take you to church even once a week, and you would have this matter reduced to a commercial basis, even though you be a liberal subscriber to the fund for carrying on the church work, it is not at all likely your subscription amounts to as much as you would charge a man for an hour of your office-time once a week the year round. Yet your minister serves you, not only one hour per week, but several, and serves not only yourself, but all the members of your family share equally with you in the benefit derived. Balance this account, and tell The Record, honestly, are you loser or gainer? This, however, of course has no regard to the action of such physicians as doubt that any good at all accrues from preachers and their belongings. If you be of this opinion, then by all means collect your fees. The minister certainly has no claim upon you, at least none by virtue of his office, and only upon that score does he *allow* you to do this work gratis. Only please stop with the exercise of your own prerogative, and let the rest of us have the gratification of doing the minister's practice as often as the opportunity presents itself—thankful for the opportunity, first, of rendering a small service to the God who blesses us all the same as if we were better men than we are; and, second, to attest the real dignity of a profession whose aims and ends are a thousand miles beyond being estimated at a price.

Very respectfully, John C. Bogle, M.D.

Danville, Ky., March, 1887.

MORE ABOUT THE DOCTOR'S HORSE.

To the Editor of The Medical Record.

Sir: What, in part, a doctor's horse should be, as seen by one on the border line. Be it gelding or mare, it should not be large or small, weight close to one thousand pounds for road or city; it should have small, pointed, quick-moving ears; large, bright, prominent eyes, no deep cavities about them. Face should be broad—broad between the eyes. Nose straight, nostrils large. Head as a whole small, throat thin, no enlargements about the cartilages, neck arched, mane moderate in quantity and length. Breast only moderately broad or full. A great breadth indicates weighty strength and slowness of motion. The other extreme implies want of lung-capacity. Chest and body should be moderately full; abdomen should not taper rapidly or appear tucked up—it indicates feeble digestion. When driving the dejections should be studied; well moulded and moderately firm balls are desirable. The dock should be strong and resisting when raised by the hand. Fore-limbs straight, upper arm full; lower, good-sized, not small or thin; feet large, round, spreading, concave underneath. Hind-legs straight in line of long bones, not fine; feet good-sized, not so large as fore-feet. Coat fine, not too long. Now, Mr. Young Doctor, after driving the horse, if his style and action suit you, go to the stable, see him led into and out of the stall; wait until he is fed. If oats are given him, or any other grain, and he plunges into them with a will, shews actively, works as though he enjoyed his meal and is in a hurry to get them eaten up, buy before you leave the stable if the price suits you. Of course, you should know whether or not there is existing disease of any kind. In earlier life I bought on a warrant. The brown horse generally is sound, kind, and free from all manner of tricks.

Sig.

Army and Navy News.

Official List of Changes in the Stations and Duties of Officers serving in the Medical Department, United States Army, from April 17 to April 23, 1887.

Smith, J. R., Lieutenant-Colonel and Surgeon. Detailed as member of board to meet in Washington, D. C., April 28th, to prepare rules and regulations for the government of the Hospital Corps of the Army. Par. 8, S. O. 92, A. G. O., April 21, 1887.

Taylor, Morse K., Major and Surgeon. Relieved from duty at Fort Sill, Ind. Ter., May 10, 1887; to proceed home, San Antonio, Tex., preparatory to retirement. Par. 20, S. O. 92, A. G. O., April 21, 1887.

Heizmann, Charles L., Major and Surgeon. Detailed as member of board to meet in Washington, D. C., April 28th, to prepare rules and regulations for the government of the Hospital Corps of the Army. Par. 8, S. O. 92, A. G. O., April 21, 1887.

Ainsworth, Frederick C., Captain and Assistant Surgeon. Detailed as member of board to meet in Washington, D. C., April 28th, to prepare rules and regulations for the government of the Hospital Corps of the Army. Par. 8, S. O. 92, A. G. O., April 21, 1887.

Moseley, Edward B., Captain and Assistant Surgeon. Ordered for duty at Whipple Barracks, Ariz. Ter. S. O. 86, A. G. O., April 18, 1887.

Cabell, Julian M., First Lieutenant and Assistant Surgeon (recently appointed). To proceed to Fort Omaha, Neb., and report in person to the commanding officer of that post for temporary duty. Par. 19, S. O. 92, A. G. O., April 21, 1887.

Official List of Changes in the Medical Corps of the United States Navy for the week ending April 23, 1887.

Russell, A. C. H., Passed Assistant Surgeon U. S. N. Ordered to duty at Naval Laboratory, New York, May 2, 1887.

A. C. Heffenger, Passed Assistant Surgeon, U. S. N. Ordered to Widow's Island, Me., to superintend building a naval hospital, wharf, and other improvements under instructions of the Surgeon-General of the Navy.

Woodruff, Charles E., Assistant Surgeon, U. S. N. Resignation accepted, to take effect April 8, 1887.

Medical Items.

Contagious Diseases—Weekly Statement.—Report of cases and deaths from contagious diseases reported to the Sanitary Bureau, Health Department, for the week ending April 23, 1887:

	Cases.	Deaths.
Typhus fever	0	0
Typhoid fever	4	1
Scarlet fever	53	12
Cerebro-spinal meningitis	4	4
Measles	75	9
Diphtheria	72	36
Small-pox	3	2
Yellow fever	0	0

Cauterization in Diphteria.—Dr. T. J. Hutton, M.D., of Fergus Falls, Minn., writes: "In The Record's report of my remarks at the Academy two errors appear which, if permitted to go uncorrected, would render my plan of treatment null and void. 1. The expression 'twenty to fifty grains of lunar caustic *to an ounce of water*,' should read 'twenty to fifty grains of lunar caustic *to a drachm of water*.' 2. I use solution of lunar caustic exclusively, having satisfied myself that a solution of nitrate of silver of equal strength by weight is not as efficacious for the purpose now under consideration."

The Earliest Reference to Syphilis (?) in the Bible.—Dr. J. H. Straughn, Lexington, Mo., writes: "I think I have discovered the earliest reference to syphilis which is to be found in the Bible. In Deut. xxviii. 27, we read: 'The Lord shall smite thee with the emerods;" in the French Protestant Bible we also read, 'hémorrhoïdes,' but in Luther's Bible the word used is 'Feigenwarzen.' Now 'Feigenwarze,' according to Adler, means 'a pimple, a venereal boil.'"

Biliousness and its Various Interpretations.—Dr. French of Noroton, Conn., writes that, on making inquiries of a woman about a former patient, he was told that the man's wife said he had "biles on the liver," which the informant interpreted as meaning abscess of the liver. Another neighbor, being asked about the same case, replied that the man had "piles in the liver, or something of that sort."

The Introduction of Cholera into Chili.—Dr. John Trumbull sends an interesting account of the mode in which the cholera found its way into Chili despite the greatest precautions taken to prevent its entrance. "No country," he writes, "could be better situated than Chili to withstand the attempted invasion of such a disease as cholera. No better boundaries could be desired than the extensive desert on the north, separating the country from Peru and Bolivia, the Pacific on the west, and the unbroken mountain range on the east. The Andes, furthermore, form a natural watershed, thus preventing contamination of the water-supply by the inhabitants of neighboring countries. the sole danger therefore lay in importation of the disease by infected clothing or in the person of fugitives from the eastern side of the mountains. Every

port of Chili was absolutely closed to vessels coming from the eastern coast of South America, and guards were stationed at the mountain passes. A dozen of the most frequented passes were thus closed, but, the winter being a dry one, the fall of snow was light, so that more than a hundred of the less well-known passes are said to have been open. The introduction of the disease was traced directly to a party of fugitives coming from the Argentine Republic. A cattle-dealer, with four servants, crossed the mountains and remained concealed for a time in the village of Santa Maria. One of the number was sick, and five days later, on Christmas, 1886, the first authentic case of cholera occurred in the person of a laborer in that village. As soon as the nature of the disease was recognized, a military cordon was placed around the infected district, and the branch railroad leading therefrom was closed. But an exodus from the place had already commenced, and on December 30th, one of the fugitives died immediately after his arrival at a small station of the main railway line, forty-five miles from the seaport. Four days later the man who had attended this case sickened and died, and thus a second centre of infection was established. This case was an exception to the general manner of the spread of the disease, the water having been the carrier of the infection. In Chili, artificial irrigation is relied upon in agriculture, and the river water is carried through small canals (*acequias*), traversing the valleys in every direction, and furnishing the supply needed for drinking, cooking, and bathing. The canals then act as sewers, the water-closets being built over them,are next used for purposes of irrigation, and finally empty again into the river. No cordon could be of avail under such circumstances, and it was along the banks of the acequias, carrying the waste matter from the village of Santa Maria, that the disease next disclosed itself. After that a section of country, miles away, but on the bank of the same river, and drawing its water-supply from this source, was invaded. As yet the disease has not spread from the district supplied by the Aconcagua River, but several suspicious cases have appeared elsewhere, and much anxiety is felt concerning the future." Dr. Trumbull's letter, of which we have been compelled from pressure of other matter to give but an abstract, possesses a peculiar interest, since it seems possible that the disease may be brought to this country from the west coast of South America. Cases of suspected cholera are said to have been noted at the Isthmus, and if the disease becomes prevalent there, there will be great danger of an invasion of our own country.

An Analysis of Two Hundred and Fifty Autopsies on Drunkards.—Dr. Formad, in a paper on the above subject, considered the most conspicuous lesions to be cyanotic induration of the kidneys, fatty infiltration of the liver, and a mammillated stomach. His cases had been those in which there had been a history of a long-continued series of debauches, the subject often dying in one of these debauches, and did not include moderate drinkers or those who perished after imbibition of an enormous quantity of alcohol without any previous chronic excesses. He thought that the exposure, irregularities, of diet, etc., incident to a state of drunkenness, had much—probably more than the alcohol itself—to do with the production of the lesions; but it was not at all possible to separate one from the other. He gave a long list of lesions considered by various authors to be results of chronic alcoholism, among which the cirrhotic liver with contraction held a prominent place. He had himself at one time considered cirrhosis a very frequent, if not almost necessary, concomitant of long-continued, excessive use of alcohol, and had even testified in court that a certain person was not likely to have been a hard drinker, because at the autopsy no cirrhosis of the liver was found. He had thought, too, that the connection between the two was so close that it was impossible to have a case of cirrhosis without a previous history of alcoholism, as is held by various authors. Therefore, it was surprising to him to meet in his two hundred and fifty autopsies with only six cases of cirrhosis of the liver with contraction. In two hundred and twenty cases the liver was considerably or even very much enlarged, the enlargement in most cases proving to be due to a fatty infiltration. Cyanotic induration of the kidney and chronic gastritis, with mammillation of the stomach, were found in nearly every case. This cyanotic induration is peculiar, and differs from the cyanotic induration due to heart disease.—*Philadelphia Medical Times.*

Nitro-glycerine in Suspended Animation.—An interesting case is reported in the *Sei-i-kwai*, a medical journal of Japan, of the resuscitation of a woman, apparently dead, by the hypodermatic injection of nitro-glycerine. A Mrs. Fraser, of Chicago, a few days after childbirth sank from collapse, and life was believed to be quite extinct. Dr. M. H. Sackersteen, who was in attendance, after having administered various remedies, was about to abandon the case as hopeless when it occurred to him to try nitro-glycerine. He injected ten drops of a solution into a vein. A minute elapsed before his patient gave a slight gasp; in another minute this was followed by three or four gasps, and after the third and fourth minutes the pulse was felt, and the heart was distinctly heard; a flush came over the face of the patient, the eyes opened, and the muscles, which had assumed the rigidity of death, gradually relaxed, and she became conscious. In a few days Mrs. F. made a good recovery. It has has been suggested that the hypodermatic injection of nitro-glycerine should be tried in all cases of collapse or death from an overdose of chloroform and shock from surgical operation. Martindale, in his "Extra Pharmacopœia," gives several forms for the administration of nitro-glycerine in solution, hypodermatic injection when the patient cannot swallow, or drops, tablets, etc., all being perfectly safe, stable, and palatable. His tablets or troches are quite attractive in appearance, and cannot be distinguished by taste from ordinary chocolate creams. No child would refuse them. —*Medical Press.*

Treatment of Psoas Abscess.—Dr. William A. Byrd, in his surgical report of St. Mary's Hospital, at Quincy, Ill., says: "There was one death from psoas abscess that was operated upon, in 1885, by making an incision at the lower portion of the abscess and passing a probe up through the sinus and opening upon the point of the probe above the ilium, then following the sinus along upward with the probe and opening at different points, so as to secure perfect drainage. He died worn out by suppuration. The autopsy revealed aberrant sinuses running down among the muscles of the pelvis and thigh that could not have been discovered by that method of operating. The next case of this kind that I saw was with Dr. J. C. Hearne, of Hannibal, Mo. In that case we cut into the pus cavity just above the pubis and laid the whole cavity open from there to the junction of the twelfth rib with the spinal column, a distance of nineteen inches. By that means every recess was reached, thoroughly cleaned and rendered as nearly aseptic as possible, although the inner wall of the cavity was the peritoneum; it was greatly thickened by the inflammatory process, and was strengthened by deep stitches of large catgut two or three inches apart, to allow of free drainage, and then a tightly-fitting bandage was applied. In five or six weeks he was up and around the streets."

Gelatine-Coated Pills.—Dr. C. C. Stockard, of Columbus, Miss., referring to a communication of Dr. Boyd concerning the insolubility of gelatine capsules, writes that he has frequently seen gelatine-coated quinine pills pass from the bowel undigested, even where there was no gastric inflammation. He has never known this to occur with freshly filled gelatine capsules, nor with gelatine-coated pills, except those of quinine. The latter he regards as so unreliable that he never prescribes them.

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Original Articles.

BALDNESS: WHAT CAN WE DO FOR IT?[1]

BY GEORGE THOMAS JACKSON, M.D.,

ASSISTANT VISITING PHYSICIAN TO THE NEW YORK SKIN AND CANCER HOSPITAL, AND CLINICAL ASSISTANT TO THE CHAIR OF DERMATOLOGY, COLLEGE OF PHYSICIANS AND SURGEONS.

THERE is probably no one subject in medicine of which the average practitioner is less informed than that of the hair. And yet the subject is important, and everyone should have a clear idea of the resources and limitations of our art in the care of the hair and the treatment of baldness. It is the aim of this paper to point out the varieties of baldness, to throw as much light as possible upon its causation, and to show what and how much may be done in the treatment of it.

The four main varieties of alopecia are: 1, Alopecia adnata; 2, alopecia senilis; 3, alopecia prematura or presenilis; and 4, alopecia areata. The last variety will not be considered at this time, as I have recently contributed a paper upon the subject to the *New York Medical Journal*—in February, 1886.

Alopecia adnata is that form of baldness which is congenital, as its name would indicate. It is comparatively infrequent. An infant is born either with a good crop of long, colored hair which early falls out, to be replaced with light-colored permanent hair, which soon grows darker; or it is born with colorless hair in greater or less abundance, which gradually becomes darker; or it is born with a perfectly bald head. In the majority of cases this last condition is transient, and in a few days or weeks the scalp will be covered with hair. All these states of hair-growth are dependent upon the time when the change of type between the fœtal and permanent hair takes place. As a rule the change is complete at birth, when we find the colorless hair; if it is delayed until after birth, we have the long, dark hair; if at the time of birth the fœtal hair has been shed, but there has not been time for the permanent hair to grow, we have he bald head.

Now all these are normal conditions, and even the last, or bald head, is only to be considered as transient alopecia adnata. But in some cases the hair-growth is delayed for months, and in some of these there is a condition of lichen pilaris present, the scalp being rough and covered with pointed papules. The hair will usually grow in time, though a few cases have been reported in which the hair never grew. Delayed dentition, or even a deficiency of teeth, has been observed in these cases.

The *cause* of this form of baldness is an arrest of the development of the hair. Upon what condition such an arrest depends we do not know. Microscopical examinations of sections of the scalp in cases of inveterate alopecia adnata show either an absolute absence of hair-follicles or an aborted development of them. In some families the disease is hereditary.

As to *treatment*, the most we can do is to attend to the general nutrition of the child and the hygiene of the scalp. Happily in most cases the disease remedies itself. The scalp should be kept free of sebaceous accumulations, and thoroughly washed with soap and water. Should the parents and friends become restive under this expectant plan of treatment, some stimulating hair-wash may be prescribed, such as will be given when we come to the discussion of alopecia presenilis. If lichen pilaris is present, the free use of soap frictions, with the tincture of green soap every day, followed by inunctions with oil, will remove the accumulation of epidermis which clogs the hair-follicles, and thus give the hemmed-in hair a chance to grow.

Alopecia senilis is that form of baldness which occurs in old age, or after the age of forty-five, and is often preceded or accompanied by grayness of the hair. When this form of baldness begins, it is progressive. Commencing upon the vertex it forms the tonsure, and from there spreads forward so as to involve the whole top of the head; or it may begin anteriorly and spread backward; or the whole top of the head may show a thinning of the hair. When complete the scalp is smooth, oily, shiny, and looks stretched. It is unaccompanied by any disease of the scalp, excepting, perhaps, a slight seborrhœa. The region it affects is that part of the scalp over the aponeurosis of the occipito-frontalis muscle, while the occipital and lateral parts of the scalp are spared. It is always symmetrical.

The *cause* of this form of baldness is a gradual sclerosis of the subcutaneous tissues of the scalp, the retrograde process beginning in the arterial supply to the scalp, a fibrous endarteritis narrowing the lumen of the cutaneous arteries, till finally the capillary circulation about the hair-follicles is obliterated. This causes a lessening of the subcutaneous fat and a narrowing of the meshes of the connective tissue. It is but one expression of that general lowering of nutrition incident to advancing years.

When the scalp is atrophied we can do nothing in the way of *treatment;* there is no cure for alopecia senilis. Prophylaxis may do a good deal in postponing the loss of hair. Of what prophylaxis consists will be shown in the next section.

Alopecia prematura is that form of baldness which occurs before the forty-fifth year of age. It is true that the dividing line is purely arbitrary, but it is convenient, and the age of forty-five is usually considered to be that of man's prime, the top of the hill of life. There are two varieties of premature alopecia, viz., the idiopathic and the symptomatic, each of which deserves separate consideration.

Idiopathic premature baldness begins at any time before forty or forty-five years of age, most commonly between the ages of twenty-five and thirty-five. Its peculiarity is that it arises uninfluenced by any antecedent or concomitant local or general disease. When it once begins, it is generally progressive. Its course is the same as that of the senile form, beginning on the vertex and proceeding forward; or beginning on the forehead and running backward; or affecting the whole top of the head. It is a process of gradual loss of vigor, and a gradual lessening of the diameter of the hair. The hairs which first fall out are replaced by those of less vigorous growth; these in their turn are shed to make way for yet weaker ones, and so the process is repeated until complete baldness results, no new hairs being produced to take the place of those which are shed. The scalp in the affected region is atrophied, and often bound down to the underlying tissues so tightly that it cannot be slid about as easily as in the normal condition. It differs from senile alopecia in the earlier age at which it occurs, and in usually being unaccompanied by other signs of

[1] Read before the New York County Medical Society, April 26, 1887.

diminished physical vigor, such as canities, loss of teeth, and dulness of sight and hearing.

The chief *cause* of this variety of baldness is heredity, and everyone has known of families in which the fathers and sons for many generations have become bald at an early age. This is due, according to Pincus (*Berl. klin. Wochenschrift*, 1883, xx., 645), to the fact that in certain families there is a tendency to an early induration of the connective tissue under the aponeurosis of the occipito-frontalis muscle, the meshes of which, becoming progressively lessened in size, gradually draw the scalp down upon the underlying tissues, and the hair-papillæ, becoming more and more pressed upon, are at first lessened in diameter and at last completely obliterated.

Improper or deficient care of the scalp and hair is another cause of early baldness, or, at least, hastens its advent in those predisposed thereto. It is a very common practice for men to souse the head daily in water, and as Ellinger (*Virchow's Archiv*, 1879, lxxvii., 549) has noted this habit in eighty-five per cent. of his cases of baldness, it is probable that it is an important etiological factor. Thinkers and brain-workers are very often bald. Eaton (*The Popular Science Monthly*, October, 1886) has recently upheld the thesis that the coming man will be bald and toothless. He found by actual count that baldness was far more prevalent among the intellectual and educated classes than among the uneducated. Thus in the audiences attendant upon churches and operas in Boston, from forty to fifty per cent. of the men were bald; while the percentage was only twelve to twenty-five among the crowds visiting cheap museums and prize-fights. In active intellectual effort the circulation of the head is increased, and the scalp sympathizes and becomes warmer than usual. This increased warmth of the scalp in thinking may operate in the same way in the production of baldness as does the wearing of tight, unventilated hats, which sweat the hair more or less. Stiff hats may cause baldness by compressing the arteries that supply the scalp. Thus F. A. King says (*American Journal of the Medical Sciences*, 1868, April, p. 416): "Baldness of the vertex is due to compression, by stiff hats, of the anterior temporal arteries in their course over the frontal protuberances, and of the occipital behind. The reason why baldness occurs in different places in different individuals is probably due to differences in the shape of the head. The little tuft of hair often observed on top of the forehead is nourished by the two supraorbital arteries which escape pressure by passing over the forehead in the slight concavities between the frontal eminences." The existence of this little island or tuft of hair depends more likely upon its being located over the belly of the occipito-frontalis muscle, and not over its tendon.

That women do not become bald so often as men is probably because they preserve the cushion of fat under the scalp longer than men do. Pincus says that their comparative exemption is due to the fact that in them "the spaces between the connective-tissue fibres in the deeper and middle layers of the scalp are much larger than in men, the skin of women during their life preserving more of the characteristics of the skin of children." Other reasons for their comparative freedom from baldness are given, such as: Because they do not wear their hats as much as men, neither are their hats so close-fitting nor made of so impermeable materials; because they give more attention to the care of the hair than men; because they seldom wet their heads; because they are not so abundantly covered with hair as are men, and therefore have less drain upon the hair-forming elements; because their hair is less often cut. Of all these reasons those of most weight are the preservation of the subcutaneous fat and connective tissue, and the greater attention paid to the scalp.

The *treatment* of idiopathic premature baldness is mainly one of prophylaxis and of hygiene. Though hosts of remedies have been proposed from time to time, and more or less vaunted, I am inclined to believe that due attention to the proper care of the scalp and to the general hygiene of the body is more reliable than any so-called remedies. Unfortunately, men who most often are bald are least inclined to give the requisite time and trouble to the care of the scalp, and therefore our results are not as good as they should be. Women, though less frequently bald, are willing to give attention to their scalps, and with them our results are better.

Prophylaxis consists in giving early and proper care to the scalp and hair, and this especially in families in which baldness is markedly hereditary. Prophylaxis should be begun at the birth of the child in such families and continued throughout life. The proper care of the scalp consists in keeping it clean by an occasional shampoo of soap and water, borax and water, or some such simple means, and in brushing and combing the hair, and in the avoidance of all things that can harm the scalp. The shampoo need not be repeated oftener than once in two or three weeks, and whenever the scalp has been washed it should be carefully dried, and some simple unctuous substance applied, such as vaseline or sweet-almond oil. Women should dry their hair by sitting before an open fire or in the sun, and should not dress it until entirely dry. The first shampoo the baby gets is to rid the scalp of the vernix caseosa. This should be most carefully done, without the employment of force, the sebaceous plate having been thoroughly soaked with sweet-oil before the attempt to wash it off is made. After it has been removed the infant's scalp is to be oiled daily until the hair is growing nicely; this is done to guard the tender scalp from injury from atmospheric and other causes. So soon as the hair is grown the scalp only needs an occasional wash to keep it clean, unless there is some sebaceous concretions, when that condition is to be treated.

The hair should be thoroughly brushed and combed daily, not in the careless way in which it is done by most people, but systematically for some five or ten minutes, and with vigor sufficient to make the scalp glow. For this we need a good brush with long, moderately stiff bristles, set in groups widely separated from each other. Such a brush will reach the scalp and brush out all dust. A comb with large, smooth teeth, set wide apart, should be used with the brush to open up the hair to the air; first a stroke of the comb and then of the brush. After the systematic brushing the stiff brush should be laid aside and a softer one used to assist the comb in parting the hair and to polish it. This operation of brushing is rather difficult for women, and most women merely employ the comb. But the stimulation caused by the brushing is very valuable and should be insisted on.

What *not* to do is of nearly equal importance with what to do, in the care of the scalp. We should not allow the use of pomades on the healthy scalp, as they are quite unnecessary if the hair is properly brushed, and by becoming rancid are apt to irritate. The daily sousing of the hair with water should be positively interdicted. Women should not use bandoline or the like sticky substances; should not pull and twist the hair in all sorts of unnatural positions; should not scorch it with curling-irons and hot pipe-stems, nor smother it under false hair. The hair needs light and air for its growth, and will not endure forever the pulling and twisting which fashion demands of its votaries. Men should not constantly wear close-fitting hats or caps. If their avocation requires their heads to be covered, they should wear ventilated, easy-fitting hats. Working under hot artificial light should be avoided, so that the head will not be sweated. Withal, the general condition of the physique should be maintained at as high a standard as possible by exercise and moderation in all things; and worry and anxiety of mind should be combated by the cultivation of a more cheerful habit of thought.

When the hair is falling the care of the scalp, as just indicated, should be continued, or, if not already practised,

begun. In addition, local stimulation must be employed. Some remarkable results in making hair grow by hypodermatic injections of pilocarpine have been reported in the medical journals. This may be tried. I have found the drug more useful in alopecia areata than in ordinary alopecia. We know that jaborandi increases the circulation of the skin, and it would seem rational to suppose that in some cases of baldness, dependent upon malnutrition of the papillæ, it might do good. Pincus, who has devoted many years to the careful study of baldness, advises the application to the scalp for from two to five minutes, on two to four successive days, of a wash of

Bicarbonate of soda.....	4 parts.
Distilled water	180 "

M.

rubbing in one or two tablespoonfuls of it with a soft hair-brush or sponge. Then a pause is made for as many days as the wash was used. On the first and second day of the interval between the applications some oil is to be rubbed into the scalp. This treatment is to be continued for a year, and if the disease is then progressive, stronger remedies are to be used. As we will have occasion to speak of a number of stimulating hair-washes when we discuss the treatment of symptomatic baldness, it will not be necessary to mention them in this place.

As a rule, the treatment of idiopathic alopecia presenilis is unsatisfactory, and we should not encourage our patients to expect to see the condition of their hair improved to any great extent under one year, at least, of treatment. But if due attention is given to the care of the scalp and hair, the fall of the hair can be checked in many cases, and that is well worth the trouble it costs.

Symptomatic premature alopecia.—By this term is meant baldness occurring before the age of forty-five, and arising from some accompanying local or general disease. It has four varieties, viz.: 1, Alopecia furfuracea or pityroides; 2, alopecia syphilitica; 3, defluvium capillorum; and 4, alopecia follicularis.

Alopecia furfuracea is that variety which is due to dandruff—a seborrhœa, or pityriasis capitis. The dandruff may be in large amount, so as to form cakes of fatty matter on the scalp, or it may be slight, in the form of thin, easily detachable scales, which fly off from the scalp and fall upon the coat-collar like snow. This variety of baldness is met with in all ages, but is most serious between the twentieth and thirtieth years of age, and is by far the most common of the different kinds of alopecia. It has two stages; during the first there is a good deal of dandruff, and the hair is dry and falls out slightly. This stage lasts from two to seven years. Then the second stage begins, when to the dandruff is added a rapid fall of the hair. The location of the baldness is the same as in the preceding forms, though it affects most often the whole top of the head. The course of the disease is progressive and more or less rapid, the hair becoming gradually thinner both as to quantity and diameter, till at last complete baldness results. With the increase of the baldness there is a continuance of the dandruff, until the hair has nearly all fallen out, when the dandruff lessens or disappears.

Alopecia syphilitica next claims our attention. It occurs in the early stage of syphilis most often, but may occur quite late in the disease. Syphilitic exanthems may be present on the scalp and body, or the baldness may be the only symptom of the disease. When it is the result of the syphilitic cachexia we will frequently find more or less dandruff, and there will be a general thinning of the hair, giving the head a peculiar look, which may be likened to the effect produced by taking a pair of dull shears and cutting the hair away in a very irregular manner, so that the head will look ragged. The head is not completely bald in any extended area, but here and there over the whole scalp are irregular, partially denuded patches. Other regions besides the scalp may be affected, the broken arch of the eyebrows being characteristic. Besides this, which may be considered the characteristic species of syphilitic baldness, we have disseminated bald spots of cicatricial tissue due to the presence of syphilitic deposits about the hair-follicles, which have undergone absorption and caused destruction of hair-follicle and scalp tissue. This latter variety belongs rather to the category of alopecia follicularis.

Defluvium capillorum is the variety of baldness which follows acute diseases, especially fevers, or occurs in the course of some cachexia, such as mercurialism. The most common form is that which follows fevers. Usually the hair does not fall out till after convalescence has begun, and then it will be very rapid, the hair coming out by handfuls at times, and the whole scalp is affected. As a rule it does not cause absolute baldness, though in some rare cases all the hair may fall from the body, as in a case of alopecia areata maligna.

Alopecia follicularis is that variety of baldness which is due to local lesions, such as the syphilides, and the parasitic disorders. The appearances presented will vary with the cause. When due to pustular diseases, such as impetigo, the patches are not larger than from the size of a silver dollar to that of the palm. When due to some diffuse inflammatory disease, such as erysipelas, the bald patches are quite large and irregular in shape, and the scalp is hyperæmic. When due to favus or ringworm the hairs are altered, becoming lustreless, dry, and split; in ringworm they are often broken off near the scalp. The bald spots of favus are covered with thick, mortar-like crusts, or are smooth, cicatricial, and of a peculiar red color. In ringworm they are covered with scales, and sometimes crusts, which are not so thick as those of favus.

The *causes* of alopecia prematura symptomatica are manifold. We have already mentioned seborrhœa sicca, syphilis, fevers, impetigo, erysipelas, and parasitic diseases. Besides these may be mentioned violent shocks to the nervous system, mental distress, parturition, lupus vulgaris and erythematosus, lichen ruber and scrophulosorum, lepra, and other cachexiæ. The baldness following fevers, and with syphilitic and other cachexiæ, is due, in most cases, to seborrhœa, but may be purely a nutritive trouble, the hair-bulbs being poorly nourished, the hair becoming loose and falling out. The baldness accompanying or following the pustular and ulcerative diseases is due to the destruction of the hair-follicles. The baldness following upon the abuse of mercury, excess in venery, and intemperance, is due to their damaging effect upon the constitution of the patient. Anything which impairs the full vigor of a man may secondarily contribute to the production of baldness, especially if he have a predisposition thereto. This predisposition is an important factor in all cases of alopecia furfuracea. We often meet with people who have had drandruff for years without alopecia; but in many subjects dandruff does cause baldness.

As far back as 1874 Malassez[1] and Chincholle[2] described a parasite as the cause of pityriasis capitis and of the baldness following it. But Bizzozero[3] has recently shown that spores, identical with those of Malassez and Chincholle, are found quite generally upon the normal human scalp. Lassar and Bishop[4] believe that alopecia furfuracea is contagious, and is frequently transmitted by barbers' brushes and combs. They explain the comparative immunity of women by the fact that they are less exposed to infection at the hands of the barber. Their experiments with the scales taken from the scalp of a man who was losing his hair rapidly, and which they made into a pomade with vaseline and rubbed upon the back of a guinea-pig and a rabbit, in each case produc-

[1] Archiv de Physiol. norm. et path., 1874, pp. 451, 465.
[2] De la nature parasitaire du pityriasis capitis, etc. Paris, 1884.
[3] Vierteljrschr. f. Derm. w. Syph., 1884, xi., 523.
[4] Monatshft. f. prakt. Derm., 1882, i., p. 131.

ing baldness, are interesting, and seem to prove their thesis. They require and deserve repetition.

Much that has been given in the etiology of the idiopathic form of premature baldness, especially in regard to the use of water on the head, the wearing of hats, and the use of pomades, could be repeated here, since they tend to produce pityriasis, and in that way alopecia furfuracea.

The *prognosis* of symptomatic premature baldness will vary with its cause. When due to dandruff, it will be good if treatment is begun in time, before actual baldness is present. Even if the hair is quite thin and the scalp shows a large number of lanugo hairs, we may yet have hope, if there is no predisposition to baldness. Defluvium capillorum usually takes care of itself, and we can give our patients a favorable prognosis. Syphilitic alopecia, when dependent upon the cachexia of syphilis, is seldom permanent. The baldness following favus is permanent; that coming after ringworm is transient. Ulcerative processes are followed by permanent baldness. Pustular lesions will not cause baldness, as a rule, and if the hair is plucked early from the follicle the danger of its occurrence is lessened.

Rapid results cannot be expected from our treatment. We must have our patients understand that they must have patience and perseverance, and that the result of treatment will depend chiefly upon their faithful carrying out of directions.

The *treatment* of symptomatic premature alopecia is both prophylactic and curative. Of course, prophylaxis applies chiefly to alopecia furfuracea. If it were better understood that dandruff is often followed by baldness, it would be early submitted to treatment, and there would be fewer bald heads. The prophylaxis for this form of baldness is the same as for the idiopathic form, and need not be repeated here.

The curative treatment of alopecia furfuracea is first addressed to the ridding of the scalp of the seborrhœa or pityriasis. If there are thick crusts or cakes of sebaceous matter on the scalp they must first be soaked with oil and then removed by the shampoo. If dandruff is present in only slight amount the shampoo may be used at once. For this purpose we should use soap and water. For our soap we may choose the tincture of green soap. If the scalp is too tender for that we may use Sarg's liquid glycerine soap, Pears' glycerine soap, Castile soap, or any good toilet-soap. Or, if the scalp does not tolerate these, we may order a shampoo of eggs, made by beating up the yolks of three eggs in a pint of lime-water and adding half an ounce of spirits of Cologne, if we want perfume. Borax and water make another excellent wash. Do not stint the water. Rub the shampoo vigorously into the scalp in all directions, using either the fingers or a long-bristled, moderately stiff brush. When the scalp has been well rubbed, the soap or chosen shampoo is to be washed out with a copious stream of water of a temperature agreeable to the patient, or, if convenient, with alternate douches of hot and cold water. The scalp and hair are then to be thoroughly dried, and a little oil rubbed into the scalp. If an excess of oil has been used it may be readily removed by pulling the hair between the folds of a towel moistened with Cologne, alcohol, or ether. The shampoo should be repeated daily for a week or so, and then once every week or two.

While the care of the scalp and hair is, perhaps, the most essential element of success in the treatment of these cases, still they need stimulating treatment in addition. So many stimulants have been recommended that one is somewhat embarrassed by the excess of richness. We may use carbolic acid in alcohol, two per cent. strength; tincture of capsicum or of cantharides, one to three drachms to the ounce of water; chloral hydrate, or tincture of nux vomica, one drachm to the ounce; corrosive sublimate, one to three grains to the ounce; the stronger water of ammonia, pure, or diluted if too strong. These may be used either as lotions or ointments, separately or in combination. Then there is a wash of rum and quinine which every druggist keeps upon his shelves, and so many of the laity use. This list is by no means exhaustive, but quite sufficient.

An excellent ointment for use, as curative of the seborrhœa, is one which is known, in at least three different dispensaries, as "Bronson's Ointment," after my esteemed friend Professor E. B. Bronson, of the New York Polyclinic. It is made of

Hydrarg. ammon	℈ij.
Hydrarg. chlor. mitis	℈iv
Vaseline ad	℥j.

M.

and when properly compounded forms an elegant pomade of the consistence of a Mayonnaise dressing, and effectual withal.

Pincus[1] advises, in the first stage of alopecia furfuracea, the rubbing of the scalp with a solution of bicarbonate of soda, strong enough to redden the skin, and following this with a compress and an oiled-silk cap to be worn all night. Unfortunately this stains the hair. In the second stage of baldness, when the hair-fall is pronounced, he advises the use either of

Tannin	gr. lxxx
Ungt. rosæ	℥j.

M.

rubbed in every night, or of

Ol. sabinæ	gtt. v.–xxx.
Alcohol	℥j.

M.

used in the same way. The latter he prefers, as it can be stopped for several weeks at a time, while the use of the former cannot be interrupted for more than six days. A hood is to be worn at night with either of these. The oil of savin often causes headache, nausea, vertigo, and sleeplessness, which interdict its use. Pincus further advises the use of a lotion or ointment containing two to four per cent. of lactic acid, and eight to ten per cent. of boracic acid, applied daily for two or three weeks, and then, after a pause of a few days, followed by an ointment of bicarbonate of soda, three to eight per cent. strength, for one week. Thus he alternates his ointments for one year.

Lassar (*Monatshft. f. prakt. Dermat.*, 1882, i., 131) has had good results by washing the scalp with tar-soap daily, following with a wash of

Sol. hg. bichlor. (1 in 300).	
Spt. cologne,	
Glycerine āā	℥ij.

M.

Then the scalp is to be dried, and a one to five per cent. solution of naphthol applied. Finally, a one and a half per cent. carbolized oil is poured over the head. I fear that we would have difficulty in persuading our patients to carry out so troublesome a procedure.

Heitzmann, of our own city, reports ("Transactions of the American Dermatological Society," 1885, p. 32) favorable results from the use of crude oleum rusci in an ointment of vaseline and paraffine, in ten to twenty per cent. strength. This is to be alternated with sulphur and white precipitate ointments.

Piffard (*Journal of Cutaneous and Venereal Diseases*, June, 1885, p. 180) has had good results by using the following:

Picis liquidæ,	
Olei lavendulæ āā	℥j.
Olei pini sylvestris	℥vj.

M.

In some cases sulphur is added at the commencement of treatment.

[1] Virchow's Archiv, 1868, xliii., 305; also, Berl. Klin. Wochenschrift, 1883, xx., 645.

Resorcin has been recommended by Ihle. I have not found it so efficacious as other remedies.

In the treatment of these cases I have seen the best results follow the systematic care of the hair, the avoidance of frequent wetting of the hair, and the use of an ointment of precipitated sulphur in the strength of one drachm to the ounce of vaseline, applied every night for a week or two, and then every other night, until the scalp no longer is furfuraceous, and then once a week for months. If care is used in applying the ointment there will be no excess of sulphur showing on the hair.

As illustrative cases of what may be done by this plan of treatment let me recite the following:

Case I.—J. D——, aged twenty. Hair has been falling steadily for past two years, excessively for last two months. Hair thin over whole top of head, dry, and dead-looking. A shampoo of borax was ordered, to be followed by the sulphur ointment, and directions as to the care of the scalp given. In three months the hair was growing luxuriantly, and the pityriasis was stopped.

Case II.—M. B——, aged twenty-six. Hair has been falling for three or four years, and over whole top of the head it is very thin. Was put upon the same treatment, and in nine months' time the hair had ceased falling, and was growing so nicely that the patient had discarded the wig which she had worn for many months.

Case III.—E. B——, aged twenty-two. Hair has been falling for two months; scalp scaly; hair thin and dry. After two months of the above treatment the scalp was looking healthy, and the hair was growing nicely.

Case IV.—Dr. A——, aged thirty-three. Hair has been falling for four years; is quite bald. After two months' treatment the fall of the hair was almost entirely checked. He reported to me, after ten months' treatment, that the hair had ceased falling, and was growing in to an appreciable degree.

Case V.—L. B——, aged twenty-two. Hair is falling and has a good deal of dandruff. After five months' treatment the scalp was in fine condition, and the hair was growing nicely.

The treatment of *syphilitic alopecia* is by the internal administration of mercury, the mixed treatment, or the iodide of potassium, according to the stage of the disease. Locally, if any lesions are on the scalp, we may prescribe a lotion of the bichloride of mercury, or an ointment of the ammoniate of mercury. If there are no lesions, then stimulating remedies may be used as in alopecia furfuracea.

Defluvium capillorum remedies itself in most cases, and only requires attention to the general condition and to the hygiene of the scalp. If this does not suffice, stimulating measures, such as those given above, may be used.

Alopecia follicularis needs the treatment appropriate to the disease present. If there are pustules on the scalp, the hair should be pulled from them.

In conclusion, I would place special emphasis upon the importance of the hygiene of the scalp; the nearer we can bring the scalp to a perfectly healthy condition, the more we can accomplish for the restoration of hair growth. Do not be too easily discouraged, nor allow your patients to despair until a year at least has been given to the faithful care of the scalp.

14 East Thirty-first Street.

In the Broncho-Pneumonia of children the treatment in Paris is ipecacuanha to the extent of vomiting the patient occasionally, the use of the bromide of potassium to quiet the cough, and the free use of alcohol. No opium is given. Mild forms of counter-irritation are applied to the chest. In croupous-pneumonia the treatment is expectant, and alcohol is used, though Professor Jaccoud gives tartarized antimony in the early stages when the patient is robust.—*Paris Correspondent of the Chicago Medical Journal.*

EXTERNAL URETHROTOMY. A PLEA FOR ITS EARLY PERFORMANCE IN MINOR TRAUMATISMS OF THE URETHRA.

By L. BOLTON BANGS, M.D.,

NEW YORK.

The object of this paper is simply to state certain propositions in regard to an operation with which you are all more or less familiar, and to invite your discussion of them. By "external urethrotomy" I mean the division of the tissues of the male perineum down to and into the urethra, for the prophylaxis and relief of stricture and its consequences, whether the stricture be acute or chronic, traumatic or otherwise. It may be qualified, according to the necessities of the case, by adding the words "with" or "without a guide;" but it is unnecessary to make the distinctions which some writers have made. Illustrations of this could be multiplied; but, for instance, Sir Henry Thompson in "Holmes' System of Surgery" separates it into "perineal section" and "external division." He limits the term "perineal section" to the cases which are impassable to any instrument, and the term "external division" to those in which one can be passed—an arbitrary distinction, because the tissues to be divided and the steps of the operation are essentially the same—the only difference being that in one the operator has no guide through the diseased urethra and in the other he has. Perhaps Gouley's definition is the most precise, viz., "external perineal urethrotomy," but it is unwieldy, and, moreover, the term which is employed in this paper is the one commonly used, and conveys to the surgical mind all the significance that is needed.

My first proposition is that the operation should be resorted to earlier than it is usually. The observation of cases which have come under my care in hospital service has led me to the reflection that their condition has been made infinitely worse by the want of timely operation. This is especially true in regard to traumatic cases. The "golden moment" is often immediately, or within a few hours, after the injury has been received, and before inflammatory processes have *fixed* the deviated urethra in a semi-cartilaginous mass which subsequent operation can never thoroughly divide. We all know the difficulty of radically curing so-called traumatic strictures. My belief is that the number of this obdurate kind would be lessened if the rule of performing early external urethrotomy were adopted in all cases which show even minor grades of injury to the urethra—for example, such as result from blows or kicks upon the perineum; or from falling astride wagon-wheels; or from falling upon stumps or sticks which penetrate the perineum and wound the urethra. If in these the presence of a tumefaction of the perineum, associated with dysuria, leads to the opinion that the urethra has received a contusion only, the operation should be done as a prophylactic, because contusion of the urethra has been known to be followed by formidable stricture at the locality. But when a few drops of blood escape from the meatus, with or *without* retention of the urine, and with or *without* obstacle to catheterism (or when it is evident that violence has been done to the urethra), the operation should be done without much delay. In the time allotted to me it will not be possible to elaborate the pathology of this part of the question, but some reasons for these statements should be given. The urethra is now damaged to a greater or less extent, probably torn at one or more points in its circumference, and the tissues surrounding it participate in the injury. The process of repair is soon to be instituted. This should go on smoothly and quietly, in order to be harmonious and conservative; but bear in mind that it is being periodically interrupted or interfered with by the necessity which exists for the urethra to perform its function. Urine is being constantly secreted. The bladder must expel its contents, and sometimes,

under the reflex agencies of the spinal cord, it does this with great violence. Even if extravasation of urine does not occur the process of repair is irritated into an inflammatory one, and cicatricial deposits, ultimately to contract, take place in and around the urethra. The same thing results in cases which necessitate and are susceptible of catheterism. The passage of the instrument is more or less irritating, and adds to the pathological status. And here it may be remarked that even these cases are not free from the danger of extravasation. I have known it to take place insidiously, little by little, into the periurethral tissues, in cases which were not supposed to require operative interference because the bladder could be emptied by the catheter.

Again, consider for a moment the pathology of another class of cases, in which the damage to the perineum and urethra has been greater. Here retention of urine has occurred. Failing in catheterism the practitioner in charge has made use of various remedial measures—opium, poultices; or, perhaps, aspiration has been resorted to, and after a while the patient feels better. His bladder ceases to trouble him, and he is at rest. In a few hours he experiences pain in the perineum, and red spots appear upon the skin, which, proving to be abscesses, are opened, and pus and urine escape. Subsequently a certain amount of restoration of the urethra takes place and some urine passes in the natural way; but finally we have a man presenting for treatment who has an indurated and strictured urethra, with urinary fistulæ communicating with the urethra at, and posterior to, the seat of original injury. What have been the steps in this case, which is one taken from actual experience? Manifestly urine has escaped from the urethra, possibly before the aspiration (or in spite of the latter, for the bladder often contracts spasmodically upon even a small amount of urine), and the patient has experienced the relief of having emptied his bladder. But this relief is temporary, for he has "voided his urine into his own tissues," which, sooner or later, have resented its presence, and inflammation with suppuration has resulted. Perhaps it may be said that healthy urine escaping into the cellular tissues does not account for the chain of pathological processes as I have stated them. Please observe that the tissues into which the urine has escaped are *already damaged*, and nature is about to *repair* them. The least additional irritation, such as the presence of even healthy urine, is sufficient to excite undue activity, and *inflammation*, rather than repair, is the result. Whatever may be the explanation of the formation of perineal abscesses in cases whose urine is presumably normal, the fact remains that we have them to deal with, and the treatment which I am advocating will, I am sure, obviate their development. In order, then, to place the urethra, with its associated muscular and nerve-structures, in the best possible condition to heal without inflammation, *rest* must be obtained for them; and further, all possible liability to extravasation of urine, with its formidable sequelæ, must be prevented. Now it seems to me that *early* external urethrotomy, before inflammation or extravasation has supervened, will meet these indications. A free linear incision through the perineum to the urethra, the latter opened, posterior to the point of injury if possible, and thoroughly distended with the forefinger, is an operation simple in execution (if performed early enough) but comprehensive in results. And what does it accomplish? It prevents the forcing of urine into the lacerated or lame urethra, and thence into the cellular planes. It enables the urine to drain away in drops, with scarcely any movement on the part of the muscles of the urethra or perineum, and without any effort by the patient. Functional activity being no longer required, physiological rest ensues. The nerve-relations of the patient are but slightly disturbed and *repair* of the injured tissues takes the place of inflammatory action.

It is obvious, then, that to obtain these ends the operation should be done at as early a moment as practicable after the receipt of the injury. I therefore submit, as a part (or corollary) of my first proposition, that the practitioner who is first called to such a case should be the one to do it. Of course, much depends upon his manual facility, and if he is at all doubtful, he should send at once for the one in his neighborhood whom he believes to possess the requisite knowledge and dexterity, without losing time in efforts at catheterism or in the giving of narcotics. A glamour of difficulty seems to have been thrown about the operation, and perhaps such an impression is conveyed by the text-books, but it should be borne in mind that for the most part these deal with cases which have become formidable because the pathological changes (which we are seeking to prevent) have already taken place. Permit me to assert that any medical man, with a fair amount of confidence and with a catheter and scalpel in his pocket-case, is competent to do the operation. The catheter may be gently passed (under ether) and the urethra opened upon it. If it be arrested, cease all further manipulations and open the urethra upon its point. The proximal end of the injured urethra, if not readily found, may be located by compressing the bladder over the pubes and causing a spirt of urine into the wound. The tissues, although they may be swollen and discolored by extravasated blood, are yet yielding, elastic, and separable, and the torn or displaced canal may be recognized by this manœuvre. A probe or the point of the catheter can then be inserted, a linear incision made, and the operation completed. If strictures are present in the penile urethra these may be treated at the same time, provided the patient's condition will allow. There is another class of cases to which the operation is applicable under this proposition. It is one in which are found perineal abscess and a urethra abnormal only from the presence of strictures of large calibre. Dr. Otis has called attention to this in his paper upon "Follicular Departure from the Urethra." In these cases it is not sufficient to evacuate the abscess and rely upon catheterism or dilatation. The urethra should be divided at the time that the abscess is opened, lest the cause of the latter persist and more deplorable results follow. In this connection permit me to cite a case which illustrates the fact that extravasation of urine may take place in spite of the fact that the urethra is open to the passage of a fair-sized instrument. I saw the patient in consultation with Dr. Craemer, of Brooklyn, by whose courtesy I am permitted to report it. J. L——, single, aged twenty-seven, was seen for the first time by Dr. Craemer on the evening of November 7th. He was found to be suffering from complete retention of urine, which had lasted for several hours. He was a reticent, uncomplaining person, and only an indefinite statement that he "had had stricture for some years" could be elicited. A No. 10 (English) soft catheter was easily introduced, and about half a pint of fetid, turbid urine withdrawn.

The next morning the catheter was again used, and twelve ounces of clearer urine drawn. The catheter was left *in situ*. The following morning it was found that, in spite of the constant drainage from the bladder, extravasation of urine had evidently taken place into the perineum and scrotum. Operation was advised and was refused by the patient. The effects of extravasation becoming more and more manifest, I was summoned, and saw the patient with Dr. Craemer a few hours later. He was then in poor condition, with a pulse of 120. Urine was escaping from the soft catheter still in the bladder. The scrotum was enormously swollen, livid in color, and on the left side of the median line was already a black mass of necrosed skin and cellular tissue, covering an oblong area two or three inches in diameter. The perineum was also deeply discolored, boggy, and so intensely swollen as to distort the raphé and bring it almost in contact with the left thigh. Plainly extravasation had been going on for some time. I counselled immediate operation, and, assent now being given, "external ure-

throtomy" was accordingly skilfully done by Dr. Craemer.

Now how can retention and extravasation of urine be accounted for in such a case as this? It might be said that the strictured urethra was suddenly plugged by mucus or muco-pus from the bladder, and that the urethra then gave way under the straining efforts of the patient. Such an explanation might be plausible or hold good in regard to a urethra which had been narrowed to filiform size; surely not in relation to one into which could be passed an instrument which *formerly* represented Sir Henry Thompson's gauge that the urethra was *not* strictured, viz., a No. 10 (English). In this case the catheter was not "bitten," not even held by the urethra, and at the time of the operation a No. 23 French grooved staff was easily and gently slid into the bladder. My own theory, based upon the study of other cases, is this: The *extravasation* was the cause of the *retention*. Thus, Otis' "Follicular Departure from the Urethra" had been quietly and insidiously taking place; that is to say, a minute quantity of urine had probably entered an ulcerated or inflamed follicle at or behind a stricture. Inflammation, with *swelling*, followed. This still further impeded the outflow of urine, and more of the latter aggravated the difficulty in the submucous tissues. The processes being reciprocal, sufficient swelling to compress the urethra finally occurred, and the more the patient strained the worse he made himself. Observe that this patient was not able to evacuate his bladder even after the catheter had been passed, and that the doctor was compelled to leave it in. My explanation of this is that the catheter could be made to traverse the urethra and "round the corners," so to speak, of the compressing obstacle, whereas the efforts of the patient simply drove his urine into the softened and infiltrated tissues. The foregoing theory was derived from observing two cases in my service at Charity Hospital. In each of these was a perineal abscess. *Before* the latter was evacuated only filiform bougies could be introduced, but after relieving the swollen and distended perineum a fair-sized staff passed readily. I therefore inferred that the swelling itself had increased the obstructing effect of the strictures.

The second proposition which I have to offer is, that the operation of external urethrotomy is in *itself devoid of danger to the patient*. Not absolutely, for this cannot be affirmed of any operation upon the living subject, but I believe that its dangers as well as its difficulties have been overstated. The danger is in the condition of the patient antecedent to the operation; or in the conditions which necessitate its performance. It is the disease of the kidneys usually present in cases of chronic stricture which predisposes to the dangers of exhausting hemorrhage and suppression of urine. I have caused search to be made in the records of autopsies of several of the large general hospitals of New York City, and have found that where death has followed the operation of external urethrotomy the patient was the subject of some debilitating, devitalizing disease, and usually of disease of the kidneys. For example, take the record of St. Luke's Hospital. Out of 140 cases of external urethrotomy for different causes there were 8 deaths; of these 4 died from the effects of diseased kidneys; 1 from chronic pyæmia, caused by abscesses in the scrotum (for which the operation was done); 1, aged sixty-one, from chronic cystitis and prostatitis; 1 from pulmonary phthisis; and 1, who had secondary syphilis, from peritonitis.

The treatment of stricture is better understood than formerly, and it is in the experience of hospital surgeons that fewer cases of extravasation of urine are now met with. And I believe, also, that in the next decade we will see fewer with perineal fistulæ and the aggravated forms of cystitis and suppurating kidneys which render the conditions of these patients so dangerous, for they will have received the benefits of treatment before serious pathological changes have taken place.

127 East Twenty-fourth Street.

THE USE OF STROPHANTHUS IN DILATATION OF THE HEART.[1]

By S. C. CHEW, M D.,

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It is probable that many members of this Society are familiar with the admirable article of Professor Thomas R. Fraser, of Edinburgh, on the action and uses of strophanthus in cardiac affections, which was published in *The British Medical Journal*, in November, 1885. The article is deserving of the highest commendation for the careful way in which the observations reported were made, and the clear reasoning from those observations which it shows.

As some present may not have seen the paper, I may be permitted to refer briefly to its leading points before speaking of the use which, under its guidance, I have myself made of strophanthus in the case which I purpose to report here, and which was one of the first in which the drug was employed in America.

The strophanthus is an African plant, found both on the western coast of the continent of Africa, in Senegambia and Guinea, and on the eastern coast along the Zambesi River. It is endowed with very active properties, for which it is used by the native tribes as an arrow poison both in hunting and in war. The poison is said to be prepared from the seeds of the plant, which are formed into a paste for this purpose. These seeds contain a crystalline principle, soluble in water and in rectified spirit, with a strongly bitter taste, and not alkaloidal in character. This is found also in the leaves and bark of the plant, but in less amount than in the seeds. This principle Professor Fraser terms strophanthin. In its action upon the frog's heart strophanthus is synergistic with digitalis, increasing the strength of its contractions, more especially the contraction of the ventricle; and, when a sufficient amount is applied, producing a strong or even tetanic contraction of the ventricle, so that the heart ceases to act in extreme systole. It is asserted by Dr. Fraser that the strophanthus in like manner increases the contractile power of all striped muscles, rendering their contractions more complete and prolonged; but that the heart is more distinctly and powerfully affected than other muscles, because it receives a larger quantity of blood than others do. But while the strophanthus is like digitalis in this action, it is very much more powerful than that drug. Some experiments of Dr. Fraser on this point show that a solution of strophanthin of one part in 10,000,000 produces a ventricular contraction of a frog's heart greater in energy than that caused by a solution of digitalin of one part in 4,000; for the digitalin solution while producing the usual changes in the heart's action, *i.e.*, increasing its contractile force and slowing it, does not arrest it; but strophanthin solution stops it in extreme systole. The difference in the power of the two agents, as thus shown, is very striking. But another difference between them, and one that may be equally important from a therapeutic point of view, is this: that whereas digitalis by an action on the blood-vessels themselves, distinct from its influence on the heart, causes increased tension and resistance in these vessels, strophanthus, on the other hand, does not act in this way, except to a very slight degree, if at all. Here again the contrast in the action of the two drugs was well shown by experiment. A solution of one part of digitalin in 20,000 when passed through the blood-vessels produced in a few minutes such extreme contraction of them as to prevent the solution from passing any longer. A much stronger solution of strophanthin, one part in 3,000, on the other hand, caused no noticeable change in the vessels, while only a slight and temporary action was produced by a solution of one part in 2,000.

This difference would again seem to make in favor of

[1] A paper read before the Clinical Society of Baltimore.

stophanthus as a therapeutic agent. For it would seem likely that in embarrassment and retardation of the circulation the beneficial effect gotten from the increased power which digitalis gives the heart is, to a certain extent, antagonized and lessened by the resistance which it causes in the blood-vessels. But, on the other hand, by the use of strophanthus not only may we have increase in heart-power, but all of the power thus gained, unhampered by obstruction in the arterioles is directed against venous stasis.

These two circumstances therefore—first, more powerful action as a heart energizer, and second, non-action upon the blood-vessels—would make it probable that strophanthus is a more efficient therapeutic agent than digitalis in the treatment of cardiac dilatation and the symptoms resulting from it.

And so in the cases reported by Professor Fraser it proved to be.

The one case in which I have made use of the drug is, so far as I have yet been able to ascertain by inquiring among my professional friends, the only one in which it has been employed in this city, with the single exception of one case of later date than mine, in which Dr. I. E. Atkinson has used it, and in which either from the advanced state of disease or unsatisfactory quality of the drug, no appreciable result was obtained from it.[1]

The preparation of the drug which I have used is a tincture which was given to me by Dr. William T. Howard, to whom it was presented last summer, while he was in London, by Dr. Fraser, as a specimen made by himself. I should have used it in a number of other cases with hope of good results, but my supply of this tincture was small, and I preferred to test its value on one case as fully as was possible with the small amount at my command. In this case it has appeared to substantiate fully the claims made in its behalf by Professor Fraser.

Case.—Ella ——, aged about twenty years, came under my charge in the Hospital of the University of Maryland, in October, 1886, when I found her suffering with general cardiac dropsy. The feet and legs were considerably swollen, but the largest amount of fluid was in the abdominal cavity, which was very much distended, so that respiration was greatly embarrassed and the patient prevented from lying down. For this she had been treated with digitalis, without much benefit, and she had been twice tapped. On examination the area of cardiac dulness was much increased, the heart's impulse diffused and lessened in intensity, and a loud systolic murmur at the apex and in the scapular region showed extensive mitral insufficiency with consequent dilatation. The pulse ranged at from 112 to 120 per minute, and the amount of urine was from fourteen to sixteen ounces in the twenty-four hours. It contained no albumen. The condition of the patient indicated the use of digitalis or other agents synergistic with it; but it was evident that with the great pressure upon the abdominal viscera and upward against the diaphragm there could be no fair and satisfactory test of drugs directed therapeutically to the heart and kidneys. I accordingly tapped the girl on October 26th, drawing off more than a gallon of fluid, with the effect of relieving her extreme dyspnœa and allowing her to lie down. Two days afterward I put her upon the use of Dr. Fraser's tincture of strophanthus in the doses, at first of two drops, and after three days, of four drops, three times a day.

Now, it it is clear that in endeavoring to estimate the value of any agent given under such circumstances, there is an obvious fallacy to be guarded against. An effect really due to the tapping might be erroneously ascribed to the action of the drug; for such results as ability to take the recumbent position, and an increase in the amount of urine, could be brought about by the direct withdrawal of the fluid even more readily in many cases than by the use of medicinal agents. Against this fallacy I endeavored to guard carefully. In the first place, I ascertained that after the previous tappings, while the patient could lie down more comfortably than before, and the amount of urine was somewhat increased, yet this increase was but slight, and there was no noticeable change in the pulse either as regards diminution of its frequency or increase of its force. Prepared with this knowledge, on the second day after the tapping, October 28th, I began the use of Dr. Fraser's tincture of strophanthus in doses of two drops three times a day. In two days there was a conspicuous improvement in the patient's condition, and on the third day the dose was increased to four drops. The breathing was much easier; the recumbent position could be maintained longer; the pulse, which had pretty constantly ranged at from 112 to 120, and had not improved after the previous tapping, was reduced to 84 per minute, and increased at the same time in fulness and strength; the impulse of the heart was more forcible, and the urine was augmented in quantity from one pint or less, daily, to more than three pints. This improvement continued steadily for ten days, the patient being out of bed and walking about the ward, and expressing herself as feeling far better in every way; when, in order to guard more perfectly against the source of fallacy referred to, I withheld the drug. In two days the patient's breathing became more oppressed, the heart's impulse lessened in force, and the pulse rose above one hundred. She begged me to give her again the medicine from which she had experienced so much relief. Its use was followed as before by prompt mitigation of the symptoms; and with occasional omissions that were followed by a return of these symptoms, which were again relieved by a recurrence to the medicine, she took it until my supply of Dr. Fraser's tincture was exhausted, when, being left without the medicine, she had a return of the urgent distress. I then obtained a specimen of tincture of strophanthus from a New York importing house; but although some relief was gotten from this, yet, either from an inferior quality of the drug, or because of the more advanced and irremediable condition of the disease, the response to the medicine has become less and less, and finally has ceased to be afforded at all. The dropsy has increased in amount, the quantity of urine diminished, the heart's action has grown feebler, and the dyspnœa has become more urgent and distressing.

About one week after the reading of this paper the patient died. The post-mortem examinatiom confirmed the diagnosis of mitral incompetency and dilatation of the heart, both of which conditions were found in an extreme degree. The amount of morbid alteration in the mitral orifice and valve was very remarkable, the two leaves of the valve being destroyed to such a degree that only two small stubs were left, so that their function must have been completely lost. The circumference of the mitral orifice was converted into a hard and rough ridge of calcareous matter, and the ventricular wall was extremely attenuated. The death of the patient under such circumstances, so far from invalidating the efficacy of the medicine, showed its power the more clearly by revealing the great difficulty against which it had to contend, and which it for the time relieved.

Since my first use of strophanthus in this case I have employed it in others similar in character. I have also used it as a cardiac tonic in other cases of weak heart without valvular or other discoverable organic disease. In one case of double pneumonia, now convalescent, in which there was great danger from extreme feebleness and intermittence of the heart, it has been manifestly beneficial. Indeed, it has seemed to me to produce some good effect always in such conditions in the way of increasing the contractile power of the heart. Such uses of the drug are suggested by Dr. Fraser. But in no case has its efficacy been more conspicuous than it

[1] Dr. Atkinson has informed me since the reading of this paper that he has recently used the drug with strikingly good effect.

was in the one above reported, in which, nevertheless, the amount of disease was necessarily fatal.

That any response to a medicine should have been made under such circumstances, or any improvement have occurred, was remarkable; and yet over and over again, in this advanced stage of disease, the most unmistakable benefit was wrought by the strophanthus.

BALTIMORE, April 15, 1887.

ANTIPYRINE IN MIGRAINE, PYREXIA, ETC.[1]

BY T. S. ROBERTSON, M.D.,

NEW YORK.

IN presenting this, my initial paper, I pray your kindly indulgence, as my subject, I fear, will not compare favorably with the average papers read before the Society. I only hope to throw a little light on a medicine that I might say we are only experimenting with at the present time, one that I hope will be a valuable addition to our therapeutic armamentarium—a remedy that in my hands, the past two years, has rarely failed in hemicrania and the pyrexia of nearly all febrile diseases. The drug I allude to is antipyrine.

Before giving my experience with the drug, I beg to give a slight history of it. First discovered by Dr. Knorr, of Munich, it was prepared synthetically by him from the constituents of coal-tar, etc. It is an oxygenated alkaloid brought into commerce in form of the free base. It forms a white crystalline powder which is easily soluble in cold water. It gives an intense coloration with chloride of iron, effects in high fever a reduction of temperature from three and a half to five degrees, without the unpleasant after-effects of quinine. The reduction of temperature takes place after half an hour; the rise gradual without a chill. The duration of the effects lasts from six to eighteen hours. It is given in doses of from ten to sixty grains. When given hypodermatically it produces a greater reduction of temperature with greater rapidity and of longer duration than when taken internally, while the quantity so administered is smaller and the drug less frequently demanded. Hypodermatically administered, it produces no local symptoms of any general disturbances, the smarting quickly passing away.

Although antipyrine is best known for its quick action in pyrexia, which I will allude to later on, I have found it most valuable in migraine. We are well acquainted with the patients, generally neurotic, presenting themselves with the exclamation, "Cannot you do something for these frightful headaches?" Except by some narcotic we rarely succeed to the patient's satisfaction, and in using such soporific we often have to put the patient to bed, thereby incapacitating him from business, which to some is a very serious matter. I have found these headaches confined to no class of persons, or sex—their duration averaging from six to thirty-six hours, occurring at all seasons of the year, among anæmics as well as plethorics, although the majority of patients are those of neurotic tendencies. They are intermittent in character, most common in middle life, and the pain very acute. They begin generally over either eye, extending over the entire forehead, and are rarely occipital. The origin of these headaches is difficult to trace beyond the nervous system, the patients frequently being in every other respect organically well. This class of patients is generally easily worried, and their disposition hysterical. Although both sexes suffer, I find sixty-six per cent. among females, for which we have good anatomical reasons.

As my paper is not to treat of any particular disease, but of the action of antipyrine in migraine, pyrexia, etc., I will therefore proceed to give my experience with it. I first began, over two years ago, to use it as an antipyretic with remarkable success, and I may mention here, except in cases with a malarial tendency, I have used since that time no other febrifuge. Another advantage it possesses—our patients do not complain of the ringing of the ears usually following the use of quinine. I have never so far found it to leave any ill effects. It is pleasant to taste, rarely interfering with the digestive apparatus. In pyrexia I often use as high as sixty-grain doses. In one case of purulent metritis I gave forty-grain doses as often as every six hours, and kept so doing for one week, the patient making a good recovery. In the pyrexia of phthisis I find it very valuable. The reduction of temperature takes place after one or two hours; at the same time the patient becomes more comfortable and sleeps better. I find the same relief in the pyrexia of pneumonia, typhoid fever, and nearly all febrile diseases. In the pyrexia of acute scarlatino-nephritis, of acute follicular amygdalitis and pharyngitis, in the irritating pyrexia of disease, in the pyrexia of milk fever, of peritonitis, and of gastro-intestinal disturbances, Dr. Barnett, my former associate, has, by the use of antipyrine, obtained most gratifying results. In many cases of acute articular rheumatism antipyrine in combination with sodii salicylate and bicarbonate has, when persisted in for some days, yielded me very desirable cures. The acute pain was lessened, the fever disappeared, and the duration of the attack was curtailed. I have in my case-book a record of over forty cases so treated. In my hands in cases of acute amygdalitis and pharyngitis the temperature was invariably reduced to a normal status, the patient resting much more comfortably, and the disease tending to abate in a shorter time than was customary and without the formation of an abscess.

But the most pleasant results I see from the use of this drug is in migraine. I have a record the past two years of over eighty cases in which I have used antipyrine for the relief of migraine. These cases are not selected. In fifty-four the drug acted favorably in from thirty minutes to two hours. In fifteen cases the pain was much abated, and when I resorted to chloral, bromides, or other drugs, I had to use smaller doses than the patient had otherwise been in the habit of taking. The relief was greater and the attacks generally cut short. From eight cases I had little or no effect. The reports from successful cases were all in favor of this drug, not only that it was quicker in its action, but that it did not leave the ill effects generally left by other forms of medication they had been in the habit of using. The usual narcotic treatment of migraine is generally hurtful, the patient being too ready, on the slightest symptom of pain, to fly to his favorite drug, many times establishing a habit which is worse than the original disease. This objection cannot be applied to antipyrine, as it neither narcotizes nor stimulates our patients. I have recommended many patients who are subject to attacks of hemicrania to keep twenty-grain powders constantly on hand, instructing them on the first symptom of an attack to use one powder in a little Vichy, and repeat in two hours if the pain has not abated. In an editorial of THE MEDICAL RECORD, February 6th, of this year, I read an article in which Dr. J. Blake White, of this city, and Dr. Unger, of Berlin, are first said to have used antipyrine in migraine. I can state that over a year ago I mentioned to Dr. E. C. Seguin, Dr. C. K. Briddon, and Dr. Robert Watts, of this city, my experience with it. When I recalled the conversation to Dr. Seguin, a few days ago, he distinctly remembered it. I will not occupy any more of your valuable time, but finish by stating that in antipyrine we have a drug that is safe and quick in its action, leaving behind no ill effects, and filling a long-desired place in our therapeutic armamentarium. A number of writers in speaking of it have mentioned its tendency, owing to the rapid reduction of heat, to produce failure of the heart's action. I must say that in my experience, and I have watched its effects very carefully, I have never yet seen the slightest ill effects from its use. In a small percentage of cases an eruption simulating that of rubeola makes it appearance on face, neck, thorax, or abdomen—occasionally on the extremities. A

[1] Read before the Neurological Society, April 5, 1887.

profuse perspiration has likewise been noted and seen in some patients. These are the patients who are especially sensitive to the effects of any drugs circulating throughout the body.

I believe that in antipyrine we have a drug, *par excellence*, with which we are able to overcome high temperatures; that it may be used in diseases where an elevated temperature has been maintained for some time—and I believe that, as the drug is only a recent innovation, a careful scrutiny of the pulse for stimulation is not contraindicated; that it is to fever what opium is to pain; that it cannot compete with quinine in intermittent fevers; that in migraine an extensive field has been thrown open for its usefulness. Its method of action here appears to be by means of a reduction in the fever-pulse rate, exerting a calming of the vaso-motor system; the capillaries dilate, and local congestion disappears. Finally, I hope that these few suggestions, based on experience, may cause others to allow no opportunity for observations of its action to escape unnoticed and unpublished.

Clinical Department.

THE TREATMENT OF BURNS.

Dr. W. P. Copeland, of Eufaula, Ala., reports the following cases to illustrate the mode of treatment employed by him in burns. He writes that he does not know whether the plan has been previously recommended, but it is one that has proved very effectual in his hands:

"Case I.—A young man received severe injuries in a boiler explosion, his face, ears, and hands being very badly burned. At the time I saw him, some weeks after receiving the burn, he was being treated by daily removals of the dressings, washing the parts with warm water and castile soap, then dusting the entire burn with subnitrate of bismuth, followed by a reapplication of the bandages and of cotton anointed with cosmoline. The patient was rapidly acquiring the morphine habit, by reason of the large doses given for the relief of pain, and the burn was doing badly. I had the dressings left off, and put the hands in pasteboard boxes without any bandages, not allowing anything to rest on the burned surfaces. The ends of the boxes were cut out to fit the wrist, and they were covered with mosquito-netting to keep off flies. The face and ears were left unbandaged also, with mosquito-netting so arranged as not to touch the burned surface. On the next day the burned surface had become dry and was covered with a thin film of scab, which gradually thickened. When pus was found to be accumulating under the scab a small opening was made at one edge, and the secretions were pressed out by means of a soft, dry piece of lint. The case progressed satisfactorily and speedily to a cure, with very little disfigurement.

"Case II.—A little girl, aged two years, was standing by an open grate when her clothes caught fire and burned a place two by three inches in dimension on the right thigh. The child was treated with the usual household remedies for a week or two, but gradually grew worse and began to have fever. Being called in at this stage, I removed all the dressings and placed a perforated oval paste-board box over the burn and secured it in place by adhesive plasters, with instructions not to remove it for three days. At the end of this time it was removed, and the burn was entirely covered over with a dry crust that protected the parts, which soon healed without further trouble.

"Without taking up time and space to relate other cases, I would summarize by saying that the method, too often adopted, of daily washing off burns or open wounds with water, and removing the secretions, only breaks up the delicate adhesions that have taken place since the last dressing, and keeps up the irritation by pulling off and washing away the very substance with which nature is trying to repair the injury."

SOME TRIALS OF BERGEON'S METHOD IN THE TREATMENT OF PHTHISIS.

Dr. M. M. Johnson, of Hartford, Conn., writes: "For the last two months I have been using Bergeon's method at the Hartford Dispensary with most satisfactory results. The treatment has not been carried on long enough to enable an accurate estimate of its true value to be formed. The patients are for the most part in the advanced stages of the disease, and are treated as they present themselves without selection of the cases. A careful record of each case is being kept, however, by Drs. Root and Segur, and in time it will be possible to form some judgment of the value of the method and to determine what cases are most likely to be benefited by this mode of treatment. Thus far there has been an evident improvement in the symptoms. The night-sweats cease, the cough becomes loose and expectoration easy, the appetite improves, the patients sleep well and increase in weight, the circulation is quickened, and the cold, clammy extremities become warm. When it is remembered that dispensary patients, as a rule, live under bad sanitary conditions and are poorly nourished, so marked an improvement in so short a time augurs well for the success of the treatment, especially as the improvement took place during the inclement weather prevalent in February and March. The apparatus is similar to that already described, except that I purify the gas by thorough washing. After the carbonic acid gas leaves the generator it passes through two wash-bottles on its way to the gas-bag receiver. When administered it is forced from the bag through a wash-bottle filled with hot water, and it then passes through another bottle, where it is impregnated with the carbon bisulphide. Thus the gas is washed three times and administered at the temperature of the body. Before inserting the tube into the rectum the gas should be passed through the tubes and bottles long enough to expel all the air. When the gas is injected cold, or mixed with air, it causes severe griping pains, but when the proper precautions are used it excites no pain or discomfort."

Dr. Henry Ecroyd, Jr., of Newport, R. I., reports the following: "Dr. S——, thirty-two years of age, naturally weak, had overtaxed his mental and physical powers, which resulted in complete prostration in December, 1886. His mother died of 'lung fever,' and a sister of acute phthisis, but the family history was otherwise good. On December 20th he had a slight pulmonary hemorrhage, was delirious during the night, and when awake had a fear of impending dissolution. Examination of the chest showed flattening under the right clavicle, with prolonged and feeble respiration, but no râles. He was removed to the Newport Hospital, and on January 1st the following symptoms were noted: Temperature, 100.7°; pulse, 84; respiration, 28. On the right side of the chest there was a dulness anteriorly to the nipple, and flatness posteriorly to the angle of the scapula. Anteriorly, crepitant and subcrepitant râles, and the same posteriorly with pronounced bronchial breathing; the face and extremities were cyanotic. His condition remained practically unchanged until January 20th, at which time the symptoms assumed a more grave type; hectic developed, the evening temperature was 103.2°; pulse, 100; respiration, 32; and the pulmonary signs gave evidence of a breaking down of the lung-tissue. It was now determined to make a trial of Bergeon's method, and on the twenty-fifth Dr. Rankin and the writer administered one litre of carbonic acid gas impregnated with sulphuretted hydrogen. The subjective symptoms were a 'tingling' sensation and a peculiar but not disagreeable taste. The following morning the temperature was normal; pulse, 80; respiration, 24. On February 28 no gas was given, and that evening the patient's temperature rose to 101.2° The next day the injections were resumed, and the temperature fell 1°. After four days the treatment was discontinued to note the effect upon

the albuminuria which had developed. At that time the patient's condition was as follows: Physical appearance greatly improved, hectic gone, night-sweats decreased, appetite decidedly improved, three meals being taken each day with the addition of five pints of liquid food in the intervals; the lower part of the area of consolidation previously noted was free from bronchophony, but fine râles were heard throughout the right upper lobe. On the ninth the injections were resumed and continued for ten days. At this time the temperature was normal, a few fine moist râles were heard anteriorly at the apex, but none posteriorly, although the respiratory sounds were still feeble. The patient was able to sit up every day, and was gaining rapidly in flesh and strength."

A CASE OF SEVERE EPISTAXIS.

Dr. L. Deakley Rood, of Northampton, Mass., reports the following: "I was called in great haste one evening to see Mr. T——, twenty-seven years of age, who, the messenger said, was having a severe hemorrhage. I went at once and found the patient raising great quantities of blood. I at once instituted the ordinary treatment for such cases, and the bleeding was soon controlled. The next morning I saw the patient again. He had been raising some blood, but not very much. The pulse was small, weak, and frequent, and the patient was so prostrated that he could hardly raise his head. I had supposed that the hemorrhage came from the lungs, as all the symptoms pointed that way, but on inquiry I learned that the patient suffered from a chronic nasal catarrh, and that he was unable to distinguish odors—in fact, had never had any sense of smell. The patient recovered his strength quite rapidly, though he still occasionally raised bloody sputa. At the end of a week I made a thorough examination of the throat and nose. The larynx was fairly healthy, but the mucous membrane of the pharynx and nose was badly congested and more or less granular. A day or two later I was called again, as the patient was having another hemorrhage. This was controlled as before, but another and more obstinate attack occurred a few days later. I determined to prevent any further hemorrhage, if possible, as the patient was becoming extremely weak from loss of blood. I therefore applied solid nitrate of silver to the pharynx and nasal cavity, completely covering the mucous membrane. Twelve applications were made, and the patient never had another hemorrhage after the first application. One remarkable feature of the case is that the patient can now smell perfectly, whereas before he was absolutely without the sense of smell. My theory is that the blood ran from the nasal mucous membrane into the pharynx, and made the patient cough, when it was expectorated."

ARE SYPHILITIC ATTACKS MADE MORE PRONOUNCED BY THE WITHDRAWAL OF ALCOHOLIC STIMULANTS FROM THE INEBRIATE?

Dr. C. F. Barber, of Brooklyn, sends the following communication: "Voluminous as are the writings upon syphilis, I fail to find mention, save in a minor way, of the deleterious effects of alcohol upon the disease. True, we are cautioned again and again to induce our syphilitics to refrain from the use of alcoholic drinks, or, if habituated to their use, to curtail them as much as possible. But no stress seems to be laid upon the outcome of their abuse. It may be my misfortune to meet unfortunate cases, or perchance those made worse by neglect, but the fact impresses me most forcibly that the abuse of alcohol, while not retarding or checking the progress of the disease as to its ultimate results, causes relapses to occur more suddenly and with greater violence than they otherwise would. It may be objected that no inebriate (for it is from this class of patients I draw my inferences) takes care of himself as he should, to say nothing of following the directions of his physician. Granting the point of this statement, I nevertheless maintain that, while many neglect themselves to a dangerous degree, yet there are those who exercise more or less care and attend to their unhealthy condition. I have during my observations, extending through several years of service among this class of people, been forcibly impressed with the fact that syphilitics, as a rule, after the withdrawal of alcoholic stimulants by gradual reduction, suffer in a sudden and severe manner from the disease in some of its many forms. Whether alcohol has any controlling effect upon the disease I am unable to state positively, but certain it is that in some patients there seems to be a period of *stasis* during their excesses. I have in mind several cases in which the disease was dormant for a long period, and suddenly reappeared after a prolonged debauch. In one case this was marked by a most severe laryngitis, causing loss of voice, difficulty in swallowing (to such an extent that nothing but fluids could be taken, and these only in small quantities), swelling of the tongue, and sordes upon the tongue and inner side of the cheeks. This patient retired in apparently good health, but upon awaking the next morning found himself in the condition I have described. Another case is that of a man who invariably, after one of his debauches, is the subject of a syphilitic ulcer on the anterior pillar of the fauces. A third has to combat a serpiginous ulcer over the crest of the tibia. A fatal case which came under my observation was that of a laborer who had contracted syphilis previous to a prolonged debauch, which terminated only after he had been sent to an institution for the cure of inebriety. After being restored to apparently his healthy condition, and while at work among his fellow-inebriates, he was complained of on account of a terribly offensive odor which emanated from him. This could not have been a result of neglect of cleanliness, for he was compelled to bathe frequently. Upon examination he gave a syphilitic history, but said that he had not been troubled for some time by any manifestation of the disease. Upon the removal of his clothing there were found syphilitic papules scattered over his body, and his scrotum was found to be a complete mass of ulcers. There were also ulcers upon the inner side of each thigh. The testicles were no doubt involved; but the condition of the scrotum forbade handling, and the internal parts of the sac could not be examined. This condition had all come on within three days, as the patient had had his bath and a change of clothing, under the eye of a reliable person, but three days previous, at which time he was apparently in a perfectly healthy condition. Many other cases, varying as to intensity, might be cited, but these are sufficient to illustrate my belief. It is well for those who have the troublesome malady of inebriety to contend with to be on their guard, and at the first indication of a syphilitic nature take the case well in hand, and, by proper treatment, alleviate the sufferings which through neglect might cause results of the gravest nature."

SPONTANEOUS DELIVERY IN A CASE OF PLACENTA PRÆVIA.

Dr. B. P. Reese, of Staunton, Va., writes: "About two weeks ago I was called to see Mrs. T. C——, over forty-five years of age, of good general health, who was supposed to be pregnant about eight months. She was having slight pains at long intervals, with some hemorrhage. I directed her to remain quietly in bed and prescribed opium and camphor. Ten days later I was again called and learned that the patient had lost a good deal of blood. The vagina was filled with clots, and after removing these I found the os dilated to about the size of a half dollar. She was having very slight pains and at long intervals. I administered half a drachm of fluid extract of ergot. Dr. Gibson, who was called by me to see the case, di-

lated the os with his finger until it would have admitted the whole hand if necessary. The hemorrhage now ceased, and I repeated the ergot. The head of the child could be felt through the bag of waters, and we decided to wait upon the efforts of nature, unless some urgent symptoms presented themselves. I gave a third dose of twenty drops of ergot, and the pains soon became more frequent and forcible. The head could be felt advancing with what we supposed to be the bag of waters in front. But to my great surprise this proved to be the placenta, which came out in advance of the child with but little hemorrhage. The child appeared to be premature and was born dead. Among the other things that this case suggested to my mind was that we may sometimes be in too great a hurry to carry out the rules laid down in the text-books to deliver at once in a case of placenta prævia."

Progress of Medical Science.

THE TREATMENT OF RETRO-DEVIATIONS OF THE UTERUS.—Since October, 1882, Fraenkel, of Breslau, has treated 5,180 persons suffering from gynæcological affections; of these, 936 or 18.07 per cent., were cases of retro-deviation, that is, 645 retroflexions and 291 retroversions; the latter figure, as contrasted with the number of retroflexions, proves, so Fraenkel says, the inaccuracy of Bantock's statement that retroversion is the most frequent form of retro-deviation. Of these 936 cases of retro-deviation, 417 were patients seen in private practice, and 519 were out-door patients, treated at the polyclinic; the latter class belonged to the lower walks of life, were women who, for the most part, had undergone frequent pregnancies were obliged to work hard, and had lacked the proper care during their confinements; these causes, coupled with habitual lack of suitable nourishment and rest, being fruitful in uterine misplacements, and especially retro-deviations. In forming a judgment as to the frequency and permanence of a cure in these misplacements, Fraenkel was obliged to rely on the 417 cases in private practice, not being able to follow out the results of the treatment of the out-door patients. Of these 417 patients 123 were cases where the uterus was irreducible, where no mechanical treatment was necessary, or where the patient was subsequently lost sight of; only 294 cases were left for a fair trial of the value of mechanical support. The first step in the treatment was, of course, to rectify the retro-deviation; this Fraenkel was generally able to accomplish with the hand alone, the patient being in the knee-elbow position; in only 23 cases was he obliged to make use of the sound to straighten out the uterus. In 47 cases he was compelled to call in the aid of an anæsthetic. The only pessary which Fraenkel has used for the past four years is the Thomas pessary, which, he thinks, is sure to retain the uterus in its normal position, keeps clean, and may be worn six months or more without being changed. Another advantage of this pessary is that it allows sexual connection as well as conception; it is, moreover, sufficiently flexible, may be moulded into any shape to fit the pelvis, and renders possible a permanent cure. It is hardly necessary to say that retroflexion of the uterus entails sterility, absolute or relative. Retroflexion of the gravid uterus demands only an expectant treatment—provided that symptoms dependent on stasis, or compression of the uterus or neighboring viscera, do not exist. The gravid uterus in retroflexion often spontaneously straightens itself as that organ rises out of the pelvis; it is not true, however, according to Fraenkel, that pregnancy cures the retro-deviation, which is almost sure to return after the accouchement. To prevent this, he advises, in cases liable to this accident, the application of a large Hodge pessary the eighth or ninth day after confinement. Of the 294 cases which Fraenkel has treated with the Thomas pessary, there are, he says, 24 in which there is no doubt as to an absolute and permanent cure. These patients have been continually under his observation. The average time during which the pessary was worn was a year. The maximum was twenty-seven months, the minimum nine weeks and three months.—*The Boston Medical and Surgical Journal.*

THE DANGER OF SUBLIMATE USED IN DRESSING WOUNDS.—At a recent meeting of the Paris Biological Society, M. Lucien Butte made a communication respecting the danger of mercuric chloride when used in dressing wounds and washing out cavities. The digestive organs are those most easily affected by corrosive sublimate. When the poison has been absorbed in sufficient quantity, diarrhœa comes on a few hours after the dressing of the wound; at first it is simply watery but afterward becomes sanguinolent, and is accompanied by tenesmus, pains in the rectum, and abdominal colic, together with nausea and vomiting. Stomatitis and salivation are rarely observed. There is albuminuria, varying frequently in degree; the urine contains lymphoid and epithelial cells with granular casts. There is also severe headache, with slight transient disturbance of the intellectual faculties and insomnia. There is occasionally slight hyperæsthesia of the skin. Toward the end, although the intelligence is intact, sensation is less acute, the sight becomes dim, the pulse is weaker, the pupils contract, the temperature falls, and erythema appears, often in a very exaggerated form. The most important lesions are found in the alimentary canal, especially in the large intestine. The inflammation is generally limited to the colon, and rarely extends beyond the valve of Bauhin. There is violent hyperæmia of the mucous membrane, and the epithelium may be easily detached; the mucous membrane, which is superficially necrosed in some parts, is in others covered with a diphtheritic coating infiltrating the underlying layers. This coating is easily removed, when slight ulcerations with well-defined edges become visible. These ulcerations only affect the epithelial layer of the mucous membrane. These intestinal changes, which have been already observed by Prévost, of Geneva, have been recently studied by Charrin from an experimental point of view. Characteristic lesions are also sometimes found in the kidneys. These organs are large, pale, and anæmic, and show the changes indicative of acute parenchymatous nephritis. Moreover, at the periphery and in sections striæ are seen of irregular size and of a yellowish-white hue. Microscopic examination shows that these points and striæ are composed of deposits of amorphous masses of oxalate of lime, which are situated in the hooked tubules, and are more abundant in the cortical matter than in the pyramids. Saikowsky succeeded in producing these lesions experimentally in rodents. Prévost showed that the calcareous deposits were caused by the decalcification of the bones, which in this form of poisoning lose as much as nine or ten per cent. of their solid constituents. The peritoneum is sometimes slightly injected. The liver is generally pale and anæmic. The other organs are unaffected, excepting the brain, which, in an experiment of Dolèris, was found to be slightly congested. The course and duration of the affection are variable. In some cases the patient after a time gets quite well; while, in others, death occurs in from three to fourteen days—*The British Medical Journal.*

THE CULTIVATION OF THE BACILLUS TUBERCULOSIS.—The Paris correspondent of the *British Medical Journal*, February 12, 1887, writes on this subject as follows: "At a recent meeting of the Paris Biological Society M. Nocard stated that the researches which he had made in conjunction with M. Roux showed that ordinary broth, gelatinized with gelatine or with gelose, was one of the best media for the cultivation of the bacillus tuberculosis, if from six to ten per cent. of glycerine be added to the broth. It was much superior to gelatinized blood, re-

commended by Koch, and was much superior even to serum with peptone and sugar, which was recommended last year by M. Nocard. The cultivations were not only richer and more abundant, but they developed much more rapidly, eighty days being sufficient to produce a very thick layer of micro-organisms. The tubercle bacillus may be cultivated under these conditions not only in a liquid, but also in a solid medium. MM. Nocard and Roux's discovery is not only of considerable theoretical interest, but also of great practical importance. It is well known how uncertain was the cultivation of tubercle bacilli in serum, and how long a time it took to obtain a result. This made experimental researches on this micro-organism, from a pathological point of view, almost impossible; but, with this new medium of cultivation, they become easy, and investigators may undertake researches that were before impossible, especially as, in a medium solidified with gelatine or gelose, they will be able to isolate the tubercle bacillus from others that may be present in the same substance."

WAKING NUMBNESS.—Dr. A. H. Smith describes, under this title, a heretofore undescribed neurosis, and reports four cases, from a study of which it appears that the numbness is something added to the normal condition. It is a purely subjective condition. There is no paralysis of motion or sensation, the tactile sense is unimpaired, there is no change in the temperature of the affected part, the surface is not blanched or mottled, there is no tenderness on pressure. These characteristics separate this condition widely from those known under the names of night-palsy, local asphyxia, digiti mortui, Raynaud's disease, erythromelalgia, and from the various paræsthesias and acroneuroses heretofore described. Doubtless the conditions upon which the numbness depends are present during sleep, but the sensation is not sufficiently strong to arouse the sleeper, and he first becomes conscious of it when awakened by some other cause. The cause of this condition is probably central, since the effect is usually symmetrical. It would seem to be connected with the lowering of the circulation which takes place during sleep, and to disappear when the circulation returns to the waking condition, whether the return be spontaneous, or the result of rubbing, etc. As to the latter, it is doubtful whether it has any other effect than that upon the general circulation which the muscular exertion would necessarily produce. As for treatment, in the only case in which the condition existed by itself, and independently of more serious conditions, ergot, digitalis, strychnia, and aconite were tried at different times, but without result. The inconvenience produced by the affection was so slight that no treatment was carried out efficiently, so that even these negative results were of no value. In each of the other cases there was a diseased condition present, to which the numbness was subordinate, and which afforded the indications for treatment. In proportion as the treatment of the underlying condition was successful the numbness disappeared. If it be true that the cause is central, no local treatment is likely to be of service.—*The American Journal of the Medical Sciences.*

THE TREATMENT OF MALARIAL DISEASES BY PICRATE OF AMMONIA.—Dr. Martyn Clark, in charge of an Indian medical mission, has communicated the following to the *Lancet*: "Picrate of ammonia possesses valuable therapeutical properties, though it does not seem to have received the attention which it deserves. The characters, properties, and uses of this substance were carefully investigated by Dr. Dujardin-Beaumetz, and the results were communicated by him to the Therapeutical Society of Paris in 1872. The salt had previously been successfully used in the treatment of intermittent fever by Drs. Maconnot, Calvert, Aspland, Bell, and others. Dr. Beaumetz's investigations confirmed the results at which these observers had arrived, and showed that in this substance we have a valuable and efficient substitute for quinine in the treatment of malarial diseases. It appears to have passed out of mind, and, as far as I can gather, has never been used in India. My attention was directed to it accidentally in the following way: I had a patient under my care at a hill sanatorium who had suffered for seven months from severe intermittent fever of the quotidian type. Quinine, arsenic, and other antiperiodics had been, and were, freely used, but failed to give relief. After ten days' treatment the fever still recurred daily with its accustomed severity. At this juncture the local chemist told me of a remedy for fever, which he had received some years previously, but had never tried. This I found to be picrate of ammonia. I gave it to my patient, with very gratifying results. The fever did not recur next day, nor did it do so at any time during the three subsequent months in which she remained under my observation. I have since then constantly used the picrate of ammonia in the treatment of malarial diseases. There has been ample opportunity to test it fully, for Amritsar is notorious in the Punjab for its unhealthiness, and diseases of this kind are severe and frequent. During a period of four years and a half I have treated over ten thousand cases of these diseases with this agent, with the happiest results. So uniformly successful has it been that I have in our very extensive practice here given up the use of quinine and the cinchona alkaloids for the treatment of intermittent fever, and have substituted picrate of ammonia for them. A record was kept of five thousand cases of intermittent fever treated with this agent. Of this number, in nine cases only did it fail to cure, and in these quinine succeeded at once. I usually give it in doses of from one-eighth of a grain to a grain and a half four or five times a day in pill. Half a grain is a fair average dose. Thus given the result is soon visible. In the great majority of the cases treated, half-grain doses in the interval prevented the recurrence of the next attack of the fever, while in about twenty per cent. of the patients two or three attacks followed before the fever ceased. In one case of quartan ague, despite large doses of the salt, the fever recurred for six periods, gradually diminishing in intensity, and then yielded to it. It is equally successful in all the forms of ague, but it is a curious fact that the cases in which it failed to cure were all of the tertian variety. I have also employed this agent in the treatment of twenty-five cases of malarial neuralgia of various nerves, six cases of malarial headache, and one of malarial colic. In all these instances it cured completely and speedily. In remittent fever it does not appear to be of use; six cases of a severe type were treated with it without any effect. Neither is the enlarged spleen of ague benefited by it. I have given it in numbers of such cases in conjunction with ergotine with good results, but such results are secured equally by the use of the ergotine alone. My experience leads me to the conclusion that in all varieties of intermittent fever, and in malarial neuralgias, picrate of ammonia is a valuable antiperiodic, and it is an efficient and perfect substitute for quinia. It has the following advantages over quinine: 1. It is much less expensive. This is an important consideration where, as in Indian practice, hundreds of cases of malarial diseases have to be treated annually. 2. The dose given is very much smaller. 3. It does not produce the unpleasant effects that quinine does—headache, deafness, tinnitus, etc.; nor does it disorder the digestion or cause nausea, as quinine is apt to do, in the doses in which it has to be given in India."

URETHRITIS WITHOUT GONOCOCCI.—Chazeaux claims (*Lyon Médical*) that there occurs among rheumatics a virulent urethritis in which gonococci are wanting; that it is characterized by a purulent urethral discharge and other symptoms of blennorrhagia; that the entire absence of gonococci is the only positive point in differential diagnosis; that the rheumatic diathesis can of itself produce this disease, contagion or a specific organism being wanting.

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PHYSICAL TRAINING AND MENTAL CULTURE.

THE Annual Report of the State Reformatory at Elmira, recently issued, contains an interesting account of an experiment made to determine the value, if any, of physical culture in stimulating the mental faculties. The results, while not startling, were yet sufficiently noticeable to mark the experiment as a success.

A class was formed of twelve men, ranging in years from nineteen to twenty-nine, who had made no progress in their school work, and seemed incapable of prolonged mental effort, but who could not be classed among the feeble-minded. None of them had learned any trade, and their ignorance was almost phenomenal, many of them not even knowing the name of the State or country in which they lived. The plan followed embraced the substitution of a special dietary for the regular prison fare, frequent bathing, followed by passive exercise, kneading of the muscles, rubbing, and a manual drill and calisthenics. The course of studies pursued was the same for all, the general level of intelligence being so nearly even that no advantage was given to any by such an arrangement. The class was formed on June 5th, and was discontinued on November 6th.

The daily routine of the men forming the class was the following: Breakfast, consisting of eight ounces of bread with butter, and a pint of coffee or cocoa, was served at six o'clock. At eight o'clock the class went to the schoolroom. At half-past nine one-half of the number went to the bath. The men bathed three times a week, taking one vapor and two tub baths one week, and one tub and two vapor baths the next week. After the bath the body was spatted until the skin was in a glow, when the muscles were kneaded and pinched, passive motions of the joints were made, and then followed brisk rubbing with a coarse crash towel, all being done by a professional trainer. After the bath the men would generally sleep until dinner. Dinner was at twelve o'clock, and consisted of about five ounces of meat or ten of fish, and from nine to sixteen ounces of vegetables. After dinner they were put through a drill, supplemented with the use of dumbbells, lasting for about two hours. Supper was at five o'clock, and consisted of eight ounces of bread with butter, and one pint of tea, cocoa, or milk.

"With physical culture and improvement," reports the medical officer, Dr. Wey, "there came a mental awakening. For the five months preceding the experiment the average marking of the twelve men in school work, according to the school register, was 45.25 out of a possible 100, and during the five months of the experiment, 74.16. Figures are misleading and statistics frequently express nothing. The measure of improvement in these twelve men can hardly be expressed in numbers, but must be judged rather by the work they accomplished than by a numerical scale. The acquisition of mere book-learning was not so much an object as to determine if physical culture in men of coarse fibre and blunted sensibilities could not be made a means to mental effort and awakening. To those of us who were thrown in daily contact with the men a mental awakening was apparent, and, upon the whole, the results obtained were as great as we had reason to expect. The men became interested in their studies and strove to appear to the best advantage in the school-room, working diligently in their cells with pencil and paper to master their tasks."

The secretary of the schools, Mr. R. B. Corey, bears similar testimony concerning the progress made. He reports: "Upon realizing that an opportunity to better themselves was being offered, all the class entered heartily into the work. As their minds brightened, from being fairly contented to remain in the lowest grade an ambition to earn perfect records guided the conduct and work of all. At the present writing one man has reached the first grade, and the remaining eleven are in the second grade. The results proved that the mental faculties of the class of men under consideration can be awakened by the breaking up of former lines of conduct and by a physical training, corresponding to that enforced in this case. The record of perfect months has caused the class to use every effort to reach the first grade, and this desire, together with the educational progress already made, will undoubtedly tend to hold the men up to the average and progress that are demanded in the classes to which they are assigned."

It is difficult to say whether this awakened ambition in the minds of the men composing the class was in consequence of the improved physical condition, or was the result of a psychical impression produced by the novelty of their position. They were picked out from their fellows for a certain work, and were doubtless proud of their distinction. This, as well as their improved physical condition, made them feel in better spirits and better humor, and consequently they were in better mood for study. As Dr. Wey remarks, it will be interesting to note, now that the class has come to an end, and physical culture and stimulation as a means to an end have been discontinued, whether the men, assigned to the various shops and distributed among the primary classes, will be able to develop the mental power that the summer's work has revealed, or whether they will sink back to the level where they were before the experiment was begun.

PHYSIOLOGY "AS SHE IS TAUGHT."

A GREAT deal more has been made of the little work "English as She is Taught" than deserves to be the case. There are stupid children everywhere, and a compilation of their stupidities does not necessarily reflect upon their teachers. We should be much interested in seeing a col-

lection of examples of "Medicine as She is Taught," compiled from the green-room experiences of our medical faculties. We fancy that the misconceptions of public-school children would dwindle into superlative insignificance in comparison, as the following illustrations taken from the Western press will show: A student is asked to report a case and responds with this result:

"*History of present illness:* Stranded himself and spit of a brite red collor. *Present condition:* 'Have you any feaver or nite swets?' 'No.' Very little expanshun of scapular in rite. *Fisical examinashun:* Exagerated breading, herd fricton sounds. Herd snores valves [this statement much puzzled the examiners, ultimately they concluded the candidate referred to 'sonorous râles']. *Prognosis:* Can't be cured, but can be sent to mexico."

While too much should not be inferred from such specimens, the selections from "English as She is Taught," showing "Physiology as She is Taught" in our public schools are not only amusing, but have a suggestive interest. We append them here:

"Physillogigy is to study about your bones stummick and vertebry.

"Occupations which are injurious to health are carbolic acid gas which is impure blood.

"We have an upper and a lower skin. The lower skin moves all the time and the upper skin moves when we do.

"The body is mostly composed of water and about one-half is avaricious tissue.

"The stomach is a small pear-shaped bone situated in the body.

"The gastric juice keeps the bones from creaking.

"The Chyle flows up the middle of the backbone and reaches the heart where it meets the oxygen and is purified.

"The salivary glands are used to salivate the body.

"In the stomach starch is changed to cane sugar and cane sugar to sugar cane.

"The olfactory nerve enters the cavity of the orbit and is developed into the special sense of hearing.

"The growth of a tooth begins in the back of the mouth and extends to the stomach.

"If we were on a railroad track and the train was coming the train would deafen our ears so that we couldn't see to get off the track."

Such examination answers as the above lead one to the suspicion that the mysteries of the human body are not made very clear to public-school children.

Physiology and anatomy are difficult studies. Correct notions of our body and its functions can only be obtained by objective teaching, and then only where the student has some maturity of general knowledge. These studies should, therefore, be placed as late as possible in school courses.

THE TREATMENT OF PHTHISIS BY GASEOUS INJECTIONS.

THE reports and discussions at a recent meeting of the Practitioners' Society, published elsewhere, give the first results of the experience of New York physicians with the Bergeon method of treating consumption. The cases so treated are not many, but those reported upon were all of a serious character, and the treatment has at date of writing been continued for nearly ten weeks. Improvement occurred under the use of the injections, but no striking results were obtained, and the conclusion so far reached seems to be that while there may be "something in it," the treatment is very far from a specific for consumption.

A substitute for the method has been proposed by Dr. Szerlecki, of Lyons. He thinks that the injections act through the stimulating influence of the carbonic acid gas on the respiratory centre, and through the disinfectant properties of the sulphurous acid. He, therefore, suggests submitting patients to an atmosphere containing one per cent. of CO_2, and 0.05 per cent. of sulphurous acid.

CHRISTIAN HEALING FROM A CHRISTIAN STANDPOINT.

WE have so often been obliged to criticise the clergy, and especially such as control religious journals, for aiding and abetting medical quackery, that we turn with pleasure to a recent sermon, by the Rev. E. C. Ray, of the First Presbyterian Church, at Hyde Park, Ill., a report of which lies before us. The discourse is on the subject of mind-cures, faith-cures, etc., and its tenor may best be judged by a few extracts. The preacher says:

"*Apparent cures* are often followed by a relapse, temporary improvement by permanent decline. From reported cases of cure we must deduct many of unreported relapse; it is not in human nature, when a wonderful cure has been published abroad, to follow it up with an account of the relapse coming afterward.

"*Mistaken diagnosis* accounts for many supposed cures. Physicians often, patients more often, mistake the nature of a disease. Temporary swellings are called malignant tumors or cancers (thus cancer-doctors get their reputations); hysteria simulates almost every other disease, so as to deceive even the most elect of doctors; dyspepsia produces symptoms of heart-disease or other deadly illness. There can be no question that a large proportion of faith-cures and mind-cures, and a considerable proportion of cases under ordinary medical treatment, are cases of mistaken diagnosis, the disease being less serious in its nature than was supposed.

"*Mistaken prognosis* accounts for many cases; mistake as to what would be the outcome of the disease if no curative methods were employed. It is a truth seldom recognized by patients, though well known to physicians, that *in most cases not hopelessly fatal from the start, there is from the start a strong tendency toward recovery.* Dr. Austin Flint, Sr., than whom perhaps no abler physician has lived in this land, always urged upon his students the truth that not drugs but *vis medicatrix naturæ*, the healing power of nature, is the means of recovery. The wise physician and nurse seldom attempt more than gently and humbly to assist nature in her curative processes.

"Let me add the statement of a conviction derived from some years of such close scrutiny of medical practice of various schools as a pastor has good opportunity for—a conviction agreed to, I think, by most physicians. *The benefit of medicine is often not its direct action upon the disease or upon the body, but its action upon the mind,*

and through that upon the nervous system and the whole body, stimulating faith, hope, expectation of recovery, good cheer, which are probably nature's mightiest remedial assistants."

Discussing the question whether Christians can properly accept the theories and theological inductions of the supporters of faith- and mind-cures Mr. Ray says:

"In view of the positions thus far taken I am clear that faith-cure and mind-cure make no reasonable demand upon us to accept their theories of philosophy or of theology.

"It is clear to my mind that both the faith-cure and mind-cure theories are, though in widely different degrees, perversions of the Gospel, and injurious. A Christian may hold either one and still be a true child of God; for happily theological views are of far less importance than heart-love for God and man; but unfortunately perversions of the Gospel in the long run always do serious harm to other hearts and lives. I shall not now discuss the theology of the faith-cure, which I have on another occasion shown you to be unscriptural.

"It is also abundantly in evidence that while faith-cures and mind-cures, by their influence over the patient's hope and courage, often cure disease; yet, being ignorant of the human body, of anatomy, physiology, and pathology, and depriving sufferers of intelligent and skilled medical and hygienic advice and needed medicines, they not seldom cause death in cases which might have been relieved by proper treatment. They assume in their fanatical ignorance a responsibility which is fearful, and sometimes produces results inexcusable and criminal."

It is not often that such sound doctrines emanate from our brothers of the cloth.

THE AVERAGE INCOME OF THE FAMILY DOCTOR.

THE average income of the family doctor in England, according to estimates made by Dr. E. Paget Thurstan in *The Lancet*, is £625 or $3,225. Deducting the average working expenses and the interest on capital sunk, the average net income is estimated at $1,775. If there be included all the physicians having only salaries, as assistants, etc., or having no practice, the average net income is placed at about $1,000.

An average gross income of $3,225 is very much beyond that earned by American physicians, if we include the younger men who are still striving to establish a practice. This is the natural result of the fact that we have twice as many doctors proportionately as there are in England. We have to divide the fees.

TEMPERANCE AND STATE MEDICAL SOCIETIES.

"THE days of wine banquets at medical conventions in Texas, we trust, are over, never to return," says the *Texas Medical Journal*. This is *à propos* of a decision not to have a wine banquet, or, if we understand correctly, any banquet at all, at the coming meeting of the Texas State Medical Society.

There are doubtless some excellent local reasons for omitting the banquet, and we are not disposed to question the wisdom of our vinicidal brethren of Texas. It is a mistake, however, to think that medical meetings can flourish on scientific papers, cases, specimens, etc., alone. The doctor likes, as well as anyone, to get rid of the shop at times and indulge to his heart's content in the pleasures of good-fellowship. State medical societies are most prosperous and enjoyable in proportion as they give occasion for the agreeable social intercourse, combined with the presentation of well-prepared papers and discussions. It is unfortunate if the liberality of spirit and self-restraint of Texans are not so cultivated that banquets can be held at which those wishing to drink wine can do so, while those not desiring it can be served with the potable waters of the locality. Such arrangements prevail at the present time in most civilized sections, and Texas is eminently a civilized and progressive country.

RAGS AND DISEASE.

IN connection with the discussion recently brought by the suit of certain rag-importers to recover damages from a rag-disinfecting company in this city, we would call attention to the facts procured and conclusions adopted by the American Public Health Association.

The discussions in the daily papers upon this matter have not been temperate, to say the least, and have shown a disposition to ignore the really vital question, whether imported rags are not dangerous.

The Committee of the above association collected the following cases:

1. A rag-picker from Amsterdam introduced cholera into the city of Tilburg.

2. At Dresden a rag-picker was the first victim in that Commune.

3. At Mearsen the first one attacked with cholera was a rag-picker.

4. At Wormerveer, in 1886, rags communicated typhus fever to various people.

5. In the canton of Solothern, seventeen workmen, of whom eleven died, were seized with cholera, who were engaged among rags in the paper-mills. There was no cholera within the canton, and the rags came from a cholera district.

6. A sailor died of cholera in Europe; his clothing sent to Maine (U. S.) communicated the disease.

7. Cholera was introduced at Carthage, O., Crow Run, Minn., and Yankton, Dak., by the baggage of immigrants.

8. Nine cases of cholera, four of which were fatal, occurred at Muhlhausen (Thuringia) in 1873, introduced by clothing brought from St. Louis, in the United States, *via* Hamburg and Bremen. Rags in bales have much better conditions for preserving contagion than baggage.

The Report of the State Board of Health of Massachusetts, 1873, shows that one hundred and ninety-two cases of small-pox originated in the paper-mills of that State in 1872 and February of 1883.

The authorities consulted report hundreds of cases and numerous epidemics of contagious diseases communicated by rags.

The committee conclude that, in considering this question of disinfecting imported rags, it is well to remember these points:

1. Diphtheria and scarlet fever are very much more destructive everywhere than is small-pox.

2. Diphtheria and scarlet fever are never absent from any European country.

3. Rags collected from the homes of the people of Europe are more likely to convey diphtheria and scarlet fever than small-pox.

4. The sooner public attention is attracted to the many ways in which those diseases—scarlet fever and diphtheria—which actually destroy our people by the thousands, are introduced and spread, especially throughout the Northern States, the sooner will it become practicable to prevent the introduction of those diseases.

Although diphtheria and scarlet fever are believed to be the most important factors in connection with rags, statistics collected from paper-mills show that small-pox is much the oftener seen. Thus, as the result of Dr. J. H. Raymond's inquiries among Boards of Health and paper-mills, he found the diseases presumably carried by rags, were as follows: Small-pox, 71 cases and 24 epidemics; cholera, 1 case; scarlet-fever, 3 cases and 2 epidemics; typhoid fever, 1 case.

News of the Week.

TALMUDIC MEDICINE.—Dr. Carl von Klein writes that the so-called French work on Talmudic Medicine by Dr. Rabbinowitz includes only a part of the Talmud and is an "untasteful compilation."

DISAPPEARANCE OF CHOLERA FROM SOUTH AMERICA.—Despatches state that cholera has disappeared from Uruguay and the Argentine Republic, and is dying out in Chili, where there have been nearly three thousand deaths from the disease.

THE RELATIVE SMARTNESS OF DOCTORS' CHILDREN.—Galton has pointed out some very curious facts concerning the children of professional men. He found, from a study of the heredity of the members of some of the largest scientific societies of London, that the legal profession presented the most eminent men and the fewest idiots. The medical profession came next; and lastly clergymen, who produced the smallest number of eminent men and the largest number of idiots and feeble-minded. The lawyers gave origin to six times as many more eminent men as the clergy. The clergy gave origin to six times as many more idiots and feeble-minded as the lawyers.

MARTINEAU'S REMEDY FOR DIABETES, to which we have already referred, is prepared as follows: Carbonate of lithium, 3 grains; arseniate of sodium, $\frac{1}{10}$ grain; carbonic-acid water, 2 pints. Effect the solution under pressure. The effervescing liquid is to be drunk at meals, mixed with claret, and the foregoing dose is to last for at least three meals, being taken at the two principal meals of the day customary in Paris. No change of diet is necessary.

NOT ATTACKING THE ROOT OF THE MATTER.—The Michigan Legislature is considering favorably a bill to regulate medical practice in that State. The *Medical Age* does not favor the bill as a whole, because "it fails to deal with the question which, in our opinion, is the *fons et origo* of the evils which it is calculated to correct. It accepts the diplomas of medical colleges as a guarantee of the fitness of their possessors to practise medicine. Any medical act which does this is worthless for the end which all acts have ostensibly in view."

A MAISON DE SANTE FOR NEW YORK.—An attempt is being made to establish a "private hospital for invalids," having for its design the accommodation of such patients as wish to have the advantages of a first-class hotel and private hospital combined and be able to select their own physician or surgeon to attend them. The prices to be regulated according to location and accommodations.

DR. OLSHAUSEN, of Halle, succeeds the late Professor Carl Schroeder, at Berlin.

STATE MEDICAL SOCIETY OF WISCONSIN.—The annual meeting of this Society, was held at Oshkosh, on Tuesday, May 3d, at 8 P.M.

A SIGN OF SUMMER.—Ship Island quarantine station, off the Mississippi delta, has opened for the summer season, and quarantine has been declared by the Louisiana State Board of Health against all tropical ports where yellow fever generally prevails and where cholera is liable to exist. Until June 1st vessels will be detained only a few hours.

WATER-SUPPLY AND TYPHOID FEVER.—Dr. Charles Smart has made some comparisons between the death-rate from typhoid fever in New Orleans, a city without sewerage but using pure rain-water as its water-supply, and in Philadelphia, a city with a sewer system and a contaminated water-supply. The condition of soil in New Orleans is much worse than in Philadelphia, yet in twenty years the death-rate from typhoid fever in New Orleans, per 100,000 population, has fallen from 65 in 1866 to 16 in 1885; the average for one decade was 41.3, and for the second, 24.6. In Philadelphia the death-rate from typhoid fever, per 100,000, was 60 in 1866, and fluctuated between 41 in 1879 and 98 in 1876, while the average for the first decade was 55.8, and for the second decade it was 66.1, there being an increase of nearly 11 per 1,000. These figures point to the water-supply as the principal medium of communicating this disease.—*Sanitary News.*

ALBUMINURIA IN DIABETES.—Dr. A. Pollatschek, of Carlsbad, has published (*Zeitschr. f. klin. Med.*, xii., 4) some statistical results of the systematic examination of diabetic urine for albumen, with a view to determine whether the occurrence of the latter varies in proportion with the amount of sugar. He found that out of 1,187 specimens, containing sugar in amounts varying from traces to as much as five per cent., there occurred more or less albumen in 437. The percentage (thirty-seven) was almost the same, when reckoned on the cases examined in 1885, as on those of 1886, showing a curious uniformity. By grouping the specimens of urine according to their richness in sugar, he shows that there is no constant relation between the amount of albumen and of sugar—the lowest number of albuminurics (29.1 per cent.) occurring in cases of urine with a minimal quantity of sugar, and the highest (43.8 per cent.) in urines having from two to three per cent. of sugar.—*Lancet.*

THE DEATH OF DR. ALFRED EDWARDS HOOKER.—We regret to record the death of our young friend, Dr. Alfred Edwards Hooker. He was born in New Haven, Conn., and was a son of the late Professor Worthington Hooker, of the Yale Medical School. He received the degree of A.B. from Yale in 1880, and (having continued post-graduate studies) of Ph.B. in 1882. In the fall of the latter year he entered the College of Physicians and Surgeons, and graduated with honor in May, 1885. On the first day of June, in the same year, he became an interne in the Presbyterian Hospital of this city, and at the time of his decease was House-Surgeon of the institution, having but a month yet to serve to complete his full term. He was stricken with diphtheria—contracted from a patient in the wards—on Saturday, April 23d, and died on the following Wednesday evening. Dr. Hooker was a young man of great promise. His professional attainments, his integrity and kindliness of heart, all greatly endeared him to his associates. He was buried at New Haven, Friday, April 29th.

UNIVERSITY MEDICAL COLLEGE, NEW YORK.—Dr. Wesley M. Carpenter has been appointed Clinical Professor of Medicine, and Dr. A. M. Phelps, late of Chateaugay, N. Y., has also been made Lecturer on Orthopedic Surgery at this institution.

INTERESTING TO SPORTSMEN.—Professor Parvin states that pruritus vulvæ may be sometimes due to wild hairs.

AN ENGLISH SURGEON-GENERAL AND AN ARABIC DOCTOR.—Dr. Grant Bey gives an interesting account in the *Medical Annals* of the way in which Surgeon-General Hunter treated a distinguished native physician of Egypt, Dr. Sabin Pasha. The latter was president of the Egyptian Board of Health at the time of the cholera. He made a report about the origin of the epidemic not pleasing to the English surgeon. The political powers were invoked, Dr. Sabin was deposed, and the Board made practically ineffective. Dr. Hunter was knighted for these and other brilliant services.

A CASE OF BLACKMAIL rather than malpractice was recently brought before the courts at Troy, N. Y. Dr. R. H. Sabin was sued by a woman for $10,000 damages on the ground of improper treatment of a case of Colles' fracture. The court dismissed the case and gave the doctor judgment against the plaintiff for $99.44.

THE AMOUNT OF ALCOHOL OR DISTILLED SPIRITS USED IN THE PREPARATION OF MEDICINES in this country annually is about seven million gallons, or about ten per cent. of the whole amount produced.

CREOSOTE TREATMENT OF PHTHISIS.—Dr. Sommerbrodt, who claims so much for the creosote treatment of phthisis, uses the following: ℞. Creosoti, 1.0; tr. gentian, 2.5; spts. vini rect., 25.00; vini xeric., q. s. ad 100. M. Sig.: One ounce t. i. d. in a wineglassful of water. The creosote is increased gradually up to 2 gm.

THE FAMINE SPECIALIST, CETTI, has finished an eleven days' fast at Berlin, and Professor Senator recently presented him to the Berlin Medical Society, giving a brief preliminary report of the observations made. It seems that M. Cetti is twenty-six years of age, and his weight was reduced from 57,080 gm. to 50,650 gm. during the eleven days, an average daily loss of 585 gm. Starvation was not absolute, since he was allowed to drink water *ad lib.* He also smoked cigarettes, which, however, could not be shown to have had any influence on nutrition. His general condition remained very good. The quantity of chloride of sodium eliminated in the urine sank from eight or ten grammes on the first day to less than one gramme on the last days. The temperature was always within normal limits, attaining on the seventh and eighth days nearly the physiological maximum. On these days it reached 37.4° C. (99.3° F.), at other times varying between 36.4° and 36.8° C. (97.5° to 98.6° F.); but it never rose above that level. On these two days he was not very well, complaining of colic and suffering from hiccough. The pulse was normal, but very excitable, merely sitting up in bed causing an increase of the rate from 76 to 120. Professor Senator did not enter into further details, which are reserved for later publication, but described the very thorough methods to which M. Cetti was subjected. These comprised accurate measurements of the body and estimations of the excreta, examination of the blood as to its corpuscular richness and hæmoglobin capacity, and sphygmographic studies of the pulse. Observations on the vital capacity and estimation of the oxygen and carbonic acid of respiration were made daily. Dynamometric records were kept. The urine was most thoroughly investigated, chiefly by Drs. Müller and Munk, the analysis including estimations of urea, chloride of sodium, phosphoric acid, sulphuric acid, soda, potash and ammonia, indol, phenol, acetone, and diacetic acid, and also of the digestive ferments which have been recently shown to be present in urine in certain conditions and absent in others. The saliva and the fæces were also submitted to examination.

THE INDIANA STATE MEDICAL SOCIETY will hold its annual meeting at Indianapolis, on May 10 and 11, 1887.

PHYSICIANS' PROTECTIVE ASSOCIATION.—The physicians of Columbus, Ind., have organized a "Physicians' Protective Association," the object of which is to protect themselves from those who are able but will not pay doctors' bills.

THE CAUSES WHICH MAKE SYPHILIS MALIGNANT, according to M. Fourier, are infancy and old age, scrofulotuberculosis (whatever that may be), alcoholism, malaria, hereditary or acquired predisposition, poverty and high living, insufficient treatment. But the foremost of all is getting the disease in the first place.

NEW DISINFECTANTS.—At a recent meeting of the New York County Medical Association, Dr. Charles A. Leale presented samples of new antiseptics and disinfectants, which he had tested, with satisfactory results, in his own practice. The first of these was glycozone, which consists of chemically pure glycerine with four volumes of ozone. It was an entirely odorless fluid, and it effectually destroyed all bad odors. It was thus a very valuable application for cases of offensive cancer. The other agent exhibited was solution of peroxide of hydrogen, which, he said, constituted a most admirable substitute for Labarraque's solution of chloride of lime, which was very offensive to many individuals. Diluted with water, ten parts to one, it could be used in all cases for which the latter was employed; and, like the glycozone, it was entirely odorless and colorless.

Reports of Societies.

THE SIXTH GERMAN CONGRESS FOR INTERNAL MEDICINE.

Held at Wiesbaden, April 13, 14, 15, and 16, 1887.

PROFESSOR LEYDEN, PRESIDENT, IN THE CHAIR.

[Special to THE MEDICAL RECORD.]

WEDNESDAY, APRIL 13TH—FIRST DAY—MORNING SESSION.

AFTER the session had been called to order, the President, PROFESSOR E. LEYDEN, of Berlin, delivered the

OPENING ADDRESS.

He laid down the future work of the Congress, and also reviewed what had been done in the past. Every physician knows to what a great extent the medicine of to-day has to thank the natural sciences; he knows that science alone has saved medicine from the pool of arbitrary and inhuman speculation, and founded it anew on the basis of well-grounded facts. The physician must be a searcher of Nature. He must learn to observe, prove, and sift the causes of disease in a scientific manner. The task of the physician is, however, not yet exhausted. He has, besides the scientific problems, a practical side to which he must attend.

MEDICINE MUST BE PRACTICALLY HELPFUL.

Those who are inclined to elevate the scientific above the practical must acknowledge that medicine has not a scientific speculation but a practical need to thank for its origin. Every one who has chosen the calling of a physician must undertake its duties with conscientiousness. He must bring to his assistance, in the treatment of his patients, all the knowledge and means which, in his time, medicine will command. Medicine must be independent, quite sovereign, in this endeavor. To her there is no dogma and no method; she sees with her own eyes and hears with her own ears. Consequently the problem of medicine is not only that of the natural sciences, but there is also another problem which must be solved independently, and this must be done in every branch in its own manner. Above all things, we must not allow the consciousness of the importance of our art to fail us, for

MEDICINE IS DISTINGUISHED BEFORE ALL THE NATURAL SCIENCES

because it deals with the well-being of our fellow-men. "In this branch of the natural sciences which is called medicine," says Hüter, "is prominent the tendency to preserve the life and utility of man." This task gives to our profession its especial importance. Our age is eminently a practical one, and knowledge, to be esteemed worthy of acquisiton must be useful. In the laboratory we study the particular primary causes of disease, to investigate them in their laws, their connections, their actions. Still the experiments remain one-sided, necessarily, in that only one or few of the appearances are brought out; the great number of symptoms we can only learn at the bedside.

The first subject to come up for consideration was

THE THERAPEUTICS OF PULMONARY PHTHISIS.

DR. DETTWEILER, of Falkenstein, read the first paper on this subject. He said, through the discovery of Koch we have now won a victory over the infectious diseases, and especially over this, the most dangerous of them all. The first true efforts at prophylaxis are now practised, and we are still advancing in this line. The speaker referred to the present laudable desire of physicians to help each other in attaining the great aim in medicine, and then gave a concise historical review of all the points coming under consideration. His address closed with the following conclusions:

1. A specific treatment of phthisis has not yet been found. All investigations in this direction have so far reached no conclusion.

2. The rational treatment so far has for its object to bring the nourishment and functions of all the organs of the individual up to the physiological point. Especially is it of the greatest importance to enable the organs threatened with destruction to throw off the virus. Besides the greatest possible amount of benefit which is obtainable from fresh, bracing air, a certain degree of over-nutrition, the treatment of existing symptomatic fever, and long residence in the proper climate to insure that the patient will hold what he has gained, are essential. There must also be an accompanying treatment of the mind as well as the body, since strength both of mind and body is the surest bulwark against the first symptoms of the attack of all diseases.

3. A specific climate insuring entire immunity does not exist, and the worth of a climate depends, therefore, on the especial qualifications it possesses to attain the requirements stated in No. 2. Phthisis can be cured in any climate free from extreme changes, and the individual condition of the patient alone decides the choice, since the manner and method of living are the first essentials of proper treatment.

4. The underlying mistake in the therapy of phthisis to-day is the deeply rooted belief in the inability to obtain relief in this disease. To insure success we must enter earnestly into the case, and must sacrifice everything to the comfort of the patient and the pleasantness of his surroundings. He may have to be humored in changes from southern to mountain resorts or watering-places. The diagnosis of catarrh of the apex is bad, for catarrh of the apex is already phthisis.

5. The connection of the physician with his patient must be unbroken, and not depend on the whims of the latter; this requirement, as well as others, cannot be carried out to the letter except in an establishment or a special hospital. The part of the pedagogue and psychicist plays an important rôle in the treatment. On this account the physician must have a strong power of persuasion and a dominating will; he needs the greatest patience and resignation, true sympathy with the sufferer, and must, to use Nothnagel's words, "in this respect, if a good man, be a good lung-doctor." He then referred to the great success which had followed his individual method of cure, the so-called open-air cure, which had proved, in all seasons of the year, to be his most helpful aid. Of ten hundred and twenty-two cases of pure bacillar phthisis pulmonum which had been in his institution at Falkenstein in the last ten years, one hundred and thirty-two were discharged as entirely cured, and one hundred and ten as relatively cured. The last consisted of such cases as, from the condition of the lungs, the condition of the general health, and the vitality of the heart and lungs, would, from all appearances, yet become entirely cured. The speaker then gave as his opinion that, by more timely treatment, and longer duration of the treatment, much more than

HALF OF ALL CASES OF PHTHISIS CAN BE CURED,

and by following out a proper mode of life will remain cured.

PROFESSOR PENZOLDT, of Erlangen, followed with a paper on the same subject. He started with the statement that

PULMONARY CONSUMPTION CAN BE HEALED.

After proving this to his own satisfaction he discussed the question, What can prevent pulmonary phthisis? He answered this from the stand-point that its origin is nothing less than an infection coupled with a predisposition. He made the following points:

1. In the battle with the numerous and invisible tubercle bacilli which are scattered broadcast over the whole earth, the chance for eradication or control is but slight;

one can but hope that the government may take in hand this most dangerous of diseases as it has others.

2. We should seek to render harmless the nests of development of the bacilli in the tubercular patients.

THE POSSIBILITY OF DIRECT INFECTION

has long been known from clinical observation, although this origin of the disease is fortunately infrequent. Though this danger is small, yet it exists, and on this account it is the duty of the physician to call attention to the danger of intimate relationship with these patients. He must also insist on the greatest cleanliness in the care of the sick, freedom from sexual connection, and unnecessary intimacy. The physician should speak out boldly against the marriage of the tubercular, and should especially insist on the observance of the rules formulated upon our knowledge of infection. It is more nearly possible to remove the danger of infection on the part of patients in hospitals, and consequently there must be a hospital for consumptives or a department for them. The state should watch, with the greatest care, cattle suffering from murrain, as there is danger of infection from them; the well cattle should be regularly examined with respect to murrain, and the diseased animals should be removed, and, where it is possible, destroyed; the most careful examination of animals slaughtered, and of the meat put upon the market, should be made by competent medical authorities.

3. One must seek to prevent the people from forgetting the danger of infection; especially must this be the case with those who are predisposed, though others are also in danger. The nursing of children by tubercular mothers or wet-nurses, as well as kissing and tending by tubercular nurse-girls, should be positively forbidden.

Of great importance is the keeping up of the strength of resistance through very rich nourishment, especially meat diet; the carnivorous animals are less liable to tuberculosis than the herbivorous. The skin and mucous membrane should be hardened, the muscles should be developed as well as the lungs, and the heart and the respiratory organs protected from dust.

THE CHOICE OF BUSINESS

of the patient is of the first importance; the employments which insure plenty of fresh air—farmer, woodman, gardener, sailor, etc.—are to be recommended. With those who have brought the disease on them, the rules of life are in general the same as for those who have inherited the tendency.

The speaker then took up the question of the particular

CURATIVE THERAPEUTICS OF PHTHISIS.

There is, he said, no specific remedy for phthisis. On this account the greatest weight is to be placed on careful attention of the body; in the foreground is the air treatment—fresh, pure air, wherever found, must be used with faithfulness; the best locality is that where little or no phthisis pulmonum is found, or where many have already been cured. Parallel with the air treatment stands the rational nourishment.

The nourishment must be as rich as possible and consist principally of albumen easily digestible, and must be taken often—six or seven times a day. The third in order to be recommended is bodily exercise. The physician should watch over this closely, to see that it is carried out; walks, cautious climbing of mountains, gymnastics in the open air are especially to be advised. As the fourth point, the hardening of the skin in the case of stronger patients should not be neglected. Lastly, the mental treatment is to be recommended. The physician must encourage the anxious, cheer the despondent, but especially hold the reckless in check. The best guarantee for the carrying out of these rules is the treatment in a hospital, in a place possessing as great immunity from the disease as possible; for poor consumptives there is nothing better than good hospitals. The speaker begged his hearers to advocate, wherever possible, the establishment of hospitals for phthisical patients in places fitted for them. In the latter part of his address he discussed the medical treatment of phthisis.

DR. BREHMER, of the Hospital for Consumptives, in Goebersdorf, concurred with the gentlemen who had just spoken. He thought that the discovery of the tubercular bacillus had established the therapy of phthisis upon a firm basis. The speaker dwelt particularly on the fact that the question of the immunity of a place is of the greatest weight. Such places are found especially in mountains; fresh air is there, also, a great assistance. The immunity does not depend wholly on the height, but also upon the geographical position of the place; indeed, the height must be the greater the nearer the equator it lies. According to Gauster, immunity is found in the Austrian Alps only in those places which lie at an altitude of more than two thousand four hundred feet.

DR. MESS, of Scheveningen, Holland, said he had been treating tuberculosis for twenty-five years, in the light of the favorable experience he had had with patients in the tropical colonies of Holland. He would recommend the Germans to erect their hospitals for phthisical patients in their tropical colonies; he had cured thirty-six cases without medicine, but simply by work.

DR. HAUPT, of Soden, failed to find in the two essays just read the advice to use the mineral water of Soden, the action of which is well known to further the cure.

DR. THEIME, of Mentone, called to mind the fact that Dr. Fiedler, of Dresden, had treated his patients, suffering with lung diseases, in large airy barracks in quite a primitive manner, only giving them a cover of canvas at night. Dr. Fiedler obtained such good success that the speaker had been led to give his patients in Mentone abundance of time in the open air. He referred to the success obtained by Drs. Raymond and Apthard with tannin, and then spoke of the method of inhalation of gas used by Dr. Duremberg, of the Academy of Medicine of Paris. He had found this void of danger and followed by success. He asked the German clinicians to give this method of gas-inhalation a fair trial.

AFTERNOON SESSION.

PROFESSOR RUHLE, of Bonn, read a paper entitled

THE HEREDITY OF TUBERCULOSIS.

This was a very good continuation of the subject of the morning session. The speaker observed that from the commencement the Congress had been busy with the question of tubercular bacilli. The Congress has in a manner grown with this question, and it seems its duty not to allow it to become cold. The great discovery of Koch was made just before the opening of this Congress in 1882, and published at its first meeting. It is not to be questioned that the true tubercular poison can originate in the body. As long as tuberculosis has been discussed, heredity has been considered as influencing its propagation; there are two aids to acute infection—the poison itself, and a suitable ground to receive it. The speaker then asked how the poison gained entrance into the human race through heredity? This was investigated by Baumgartner in 1883. He was of the opinion that the poison penetrated the ovum by way of the semen; that it remained latent in the child ten years or more, and then made its first appearance. The speaker was of the opinion that this theory stood on a very weak basis. The most frequent manner of contracting tuberculosis is from a diseased person through the sputa, and also through the glands, exfoliations of the skin, or any way in which the poison may appear on the surface and be transported by means of pocket-handkerchiefs, washing, etc. The fact that the attendants in hospitals who have the care of consumptives are seldom attacked with

the disease convinced the speaker that it is not the air through which the germs are carried, but it is communicated in another mode; in fact, the way in which the members of the family kiss and fondle the patient and handle his linen. From one member of the family the tubercle goes to another. Instances can frequently be found, on inquiry, where the parents transmit the disease to their children; in such cases the family physician should put in his word of warning. It is possible that we will find that the so-called cases of heredity do not need to receive their predisposition through the semen or the mother's blood.

The speaker wished, further, to say that we should hold ourselves aloof from the idea that certain things will bring about certain forms of the disease; for instance, that pulmonary phthisis comes through inhalations, tuberculosis of the alimentary canal through the nourishment, etc. That is only a notion; and when we consider that

SCROFULOSIS IS ALSO TUBERCULOSIS,

and that undoubtedly the poison of the tubercles can remain latent an indefinite period, then we can understand that it is not so simple to lay the origin of tuberculosis to an inhalation of air or to any special primary cause. When a child had acquired a glandular tuberculosis and this heals, then after fifteen years he becomes tuberculous, according to the opinion of to-day we must believe he has had it latent in his system all this time. The speaker closed his paper with the assertion that we must abandon the theory of heredity as at present understood, and in its stead place the theory of infection, the family tuberculosis, and we should also closely study the question of scrofulosis and latency.

PROFESSOR O. FRÄNTZEL, of Berlin, did not agree with the speaker in the statement that the attendants on the tuberculous in hospitals were not infected. He had often made the observation that these attendants died of the disease, and reported three such cases from his practice in the Charité at Berlin.

PROFESSOR LECHTHEIM, of Berne, made an interesting report on the

COINCIDENCE BETWEEN PERNICIOUS ANÆMIA AND TAPE-WORM.

From the case of this kind which the speaker had observed he has come to the conclusion that tape-worm (Bothriocephalus latus) plays no great part in the causation of disease, yet has its rôle. This, however, is different in the regions about the Baltic, where the people feed largely on fish. The speaker then dwelt upon the coincidence of pernicious anæmia with changes in the spinal cord. He had found the anæmia to be the cause of the disease of the cord in two cases in which there was degeneration of the posterior columns. He related the result of his investigations, and spoke of the treatment of pernicious anæmia with transfusion of blood and infusion of salt solution. The observations he had made led him to believe the transfusion of blood is of little use, and that the infusion of salt is dangerous to patients with advanced anæmia.

PROFESSOR RINDFLEISCH, of Wurzburg, read a very scientific article on

THE PATHOLOGICAL ANATOMY OF TABES DORSALIS,

which was listened to with great attention and received with applause.

(To be continued.)

CORSETS AND THE KIDNEY.—Professor V. A. Manassein writes (*Vratch*, No. 8, 1887, p. 206) that he has collected a large number of cases which confirm the fact that movable kidneys are met with, other conditions being equal, in women who wear or have worn stays, far more frequently than in those who have never done so. This is true in regard both to nulliparæ and childbearing women.

THE PRACTITIONERS' SOCIETY OF NEW YORK.

Stated Meeting, April 1, 1887.

GEORGE F. SHRADY, M.D., PRESIDENT, IN THE CHAIR.

DR. HENRY F. WALKER reported a case of

CEREBRAL EMBOLISM AND POST-PARTUM URÆMIA,

occurring in private practice, and attended by unusual symptoms and history.

"It was that of a primipara of remarkable health, who had never in her memory been in a physician's care, except once, when suffering from a catarrhal trouble, she was under a specialist's charge. She was of vigorous frame, rather inclining to stoutness. She was habituated to constant open-air exercise, to which her pregnant condition was no hindrance. The family type was healthful; but an elder sister, in a first and only pregnancy, had suffered from albuminuria, with convulsions, so that there was special watchfulness given to the condition of the kidneys during the last half of my patient's pregnancy. The urine was examined as often as once in ten days, and the last analysis was made on December 10th. At that time the report was: "Color, amber; reaction, acid; specific gravity, 1.014; chemical and microscopical examinations, negative." Previous tests had not differed materially from this. There had been at no time any albumen or casts. The low specific gravity seemed due to an unusually free renal secretion.

The night of December 16th was one of the coldest of the winter. Mrs. C—— was wakened by slight pain and a discharge of amniotic fluid. Supposing this was urine, and that the pain was intestinal, she rose, clad only in a night-dress of thin cambric, and, without waking her husband, passed into a neighboring room. The window was wide open. She closed it and went to the closet in the hall, where she remained for nearly half an hour attempting to empty bladder and rectum. Her husband was roused by her return to bed, and found it impossible to get her warm.

Pains continued, and I was summoned at 4.30 A.M.; the nurse also. On the nurse's arrival she found Mrs. C—— chilled and trembling with cold, but attributed it to "nervousness."

I was not informed of these facts till late in the progress of the case.

The child was born at noon of December 17th, after a perfectly normal labor, borne, by preference, without chloroform.

Mrs. C—— had a thoroughly natural convalescence. I saw her daily for nine days, and then desired her not to sit up until I should see her again.

On December 29th, twelve days after delivery, she began to suffer from

A SEVERE FRONTAL HEADACHE.

It differed only in severity from headaches which she occasionally had experienced, and neither nurse or family deemed it needful to acquaint me. There was a little nausea and slight vomiting.

On December 30th, as I did not call, and as the headache seemed no less, the family sent for me in the evening. My partner, Dr. Montague Swift, saw her for me. He found the pulse normal, the temperature 99½° F. The bowels had been freely moved and urine passed in usual quantity. Bromide of potassium (℈j.) and chloral hydrate (grs. v.) were administered every two hours, but without affording desired relief.

I saw Mrs. C—— on December 31st. Her head was no better. I examined the urine passed in the bed-pan and found it highly albuminous. I ordered it drawn by catheter and sent for analysis. To the patient I gave two grains of calomel and a scruple of bicarbonate of soda, and administered, with complete, immediate relief, ten drops of Magendie's solution with the needle. The morphine was thenceforward continued p. r. n.

January 1st.—The urine, drawn by catheter, was amber in color; acid; specific gravity, 1.032; contained fully twenty-five per cent. of albumen, and gave a decided saccharine reaction. The microscope showed red blood-disks, pus-cells, but no casts. The patient made no complaint save of headache when the morphine-influence was exhausted. She had a general look of fulness, but there was no œdema which would pit on pressure.

Dr. Delafield saw Mrs. C—— with me. He advised the use of caffeine in grain dose every two hours as a cardiac and renal stimulant. At this time the daily amount of urine was about two quarts. The caffeine was continued to the end. Dr. Delafield advised withholding the morphine, but the immediate return of severe headache made it needful to continue its use.

January 3d.—After a comparatively comfortable night the patient became quite restless toward morning, and had an attack of hysterical laughing and crying, with some twitching of the face and extremities. The amount of urine passed in the night had exceeded a quart. An examination of that drawn in the morning gave a specific gravity of 1.024, ten per cent. of albumen, but no trace of sugar. By microscope, pus-cells and small hyaline casts, with adherent granular matter, were found. Early in the forenoon, while making a sudden effort to rise, Mrs. C—— became

PARALYZED IN THE RIGHT ARM AND LEG.

There was some difficulty in the movement of her lips in receiving a drink, and of the muscles in swallowing. She was aphasic. Mentally she was dull.

This condition lasted through Sunday, January 4th, though there was apparent improvement in her mental action. At 1 P.M. Dr. Thomas, in Dr. Delafield's absence, saw Mrs. C—— with me, and concurred in the diagnosis of embolism. At 8.30 P.M. I saw the patient again, and found her cataleptic on the side not affected by paralysis. I gave her ten minims of Magendie's solution and she slept quietly for an hour, when, without premonition, she had a severe convulsion, lasting twenty minutes, which was finally controlled by chloroform, administered by the nurse. Dr. Draper, living near, was summoned and saw Mrs. C—— just as the convulsion passed off. He gave brandy hypodermically, which rallied the enfeebled pulse. I reached the patient at ten o'clock, and met Dr. Draper, who attributed the convulsions to the accumulating uræmic poisoning. Dr. Draper suggested the use, hypodermically, of digitalin in one-eightieth grain doses and, alternately with this, brandy hypodermically.

Mrs. C—— never rallied. She lay with head turned to the right; her pupils were contracted, perhaps due to morphine, and she breathed stertorously.

January 5th.—Save slight convulsive movements, controlled by chloroform, there was no change except perceptible loss of strength. She died at 11 P.M., from heart-failure and attendant pulmonary œdema.

My own opinion is, that in this case I dealt with an

UNUSUAL FORM OF URÆMIA;

one not due so much to the puerperal state as to an accidental exposure and consequent renal congestion.

"My reasons are—first, negatively, the entire absence of symptoms up to and for the twelve days subsequent to delivery, which days were passed without a single adverse symptom; second, and positively, the exposure to severe cold was sufficient to excite renal congestion, while the type of urine was that which would indicate such a condition of the kidneys. For the urine was, at first, loaded with albumen, and the microscope showed many red blood-disks, without casts of any kind; while later, with albumen, granular and small hyaline casts were found in large numbers.

The embolic complication of labor has not been wholly unknown to me in practice. I have seen four cases in all. In all of the cases there was albuminuria. In three there were convulsions. All occurred in primiparæ."

Dr. Dana stated that, so far as he could find, the pathology of the puerperal paralyses had been very inadequately worked up. The only comprehensive article he had seen was by Charpentier, who collected and analyzed one hundred and forty-nine cases. Embolism occurred in the minority of these cases. The current view that many, if not most, of the puerperal hemiplegias were due to embolism was not based on accurate pathological findings, but mainly on the symptomatology. The prognosis was very bad, twenty per cent. of mortality occurring in puerperal hemiplegia. Over half the cases were in primiparæ.

Dr. Beverley Robinson said that, from a clinical stand-point, he would regard the low specific gravity of the urine in Dr. Walker's case as an important indication of the presence of chronic disease of the kidneys. He added a case that occurred in St. Luke's Hospital—that of a man who at first gave no special evidence of kidney-trouble, but later on there was pronounced evidence of renal disease, and not long after that he went into a well-marked uræmic convulsion. The usual remedies failing, he bled the patient twice, and rapid recovery from the convulsions ensued.

For one, he had a decided

AVERSION TO HYPODERMIC INJECTIONS OF MORPHINE IN URÆMIC CONVULSIONS.

He did not believe that it was good teaching to advise the hypodermic use of morphine in this class of cases.

Dr. Kinnicutt believed that the theoretical objections to the use of opium in acute uræmia admitted of doubt as to their correctness, inasmuch as the exact pathology of this condition was still unsettled. In a large proportion of cases of acute uræmia markedly increased arterial tension was present, with undoubtedly an abnormal distribution of the blood throughout the body; theoretically, all therapeutic measures capable of relieving such tension might be considered as indicated. Opium certainly possessed this power in a measure, in addition to its sedative action in irritable conditions of the nervous system, and its use would therefore seem to be indicated in acute uræmia. Clinically, he had only seen good results from its use in the condition mentioned. In uræmic headache, vomiting, and convulsions, he considered opium an invaluable drug. At the same time he believed that blood-letting in certain cases of acute uræmia was of the greatest possible service. He suggested that the symptoms described by Dr. Robinson might reasonably be expected from uræmic poisoning.

Dr. Robinson did not believe that opium, as ordinarily given, either by the mouth or hypodermically in the form of morphine, produced any stimulating effect or strengthening influence on the heart, and therefore it did not stimulate the brain. The condition of the brain present just before the occurrence of the convulsion is one of anæmia.

The President remarked that there might be as much reason for believing that the convulsions were due to irritation of the nerve-centres, and that opium acted beneficially by subduing this irritation.

Dr. Robinson said it was astonishing to see how marked the relief was that was produced by a small blood-letting in these anæmic patients.

Dr. Kinnicutt did not doubt that blood-letting oftimes was very beneficial, but he would be very sorry if obliged to accept it as the only means for controlling the convulsions.

Dr. A. Brayton Ball believed that the remarkable

POWER OF OPIUM IN RESTORING THE RENAL SECRETION

ought not be overlooked. He did not know how it was to be explained, but he believed it was a fact recognized, that opium has the power to restore the renal secretion—a fact which he thought was worthy of consideration. At first he was very strongly opposed to the use of opium in these cases, because he had seen a fatal result in two instances due to its administration. But he had

changed his opinion, and was confident that he had seen a number of cases of uræmic convulsions in which opium appeared to be of very great benefit. He supposed it was a well-recognized fact that convulsions of themselves were a great source of danger, and that that fact was regarded as one of grave significance. The remedy, then, which will control these convulsions, will place the nervous system in a state of repose for the time being, and allow it to recover itself, other things being equal, possesses great advantage.

Dr. Robinson said he did not wish to affirm that blood-letting was the only means of arresting uræmic convulsions, but he thought that it was worth commenting on in connection with Dr. Walker's case.

Dr. Ball asked Dr. Walker if the practice of using morphine hypodermically was not generally adopted in this city by obstetricians.

Dr. Walker said that he thought it was. He had resorted to blood-letting in only a comparatively few cases. Of course, chloroform was used, and it was supplemented by morphine given hypodermically.

Dr. Ball remarked that morphine, hypodermically, was in general use in these cases in Bellevue Hospital.

Dr. Shrady thought that it was generally used by practitioners in the country, and he was rather surprised at the statements made by Dr. Robinson. All recollected how Dr. Alonzo Clark opposed the use of opium in chronic Bright's disease, and for a long time—and for the reasons given by Dr. Clark—Dr. Shrady was formerly opposed to the use of opium in this class of cases.

Dr. Ball was satisfied that there was a certain amount of

TRUTH IN DR. CLARK'S OPINION,

although that might not militate against the use of opium in acute uræmia. He believed it was well established that small doses of opium might produce poisonous effects in patients who had granular kidneys.

Dr. E. Darwin Hudson said that he once held to the view that opium was contraindicated in Bright's disease; that it diminished the action of the kidneys, and, therefore, the elimination of urea. But he gave up this view long ago, and had come to regard hypodermic injections of morphine as diuretic in action. Within the last two years he had had patients with chronic kidney disease to whom he had given a hypodermic injection of morphine every night with beneficial effect.

Dr. Ball mentioned a case which he saw in consultation with Dr. John G. Curtis. Dr. Curtis was counting the patient's pulse, and while doing this the heart suddenly stopped. At that instant he saw the beginning of a general convulsion. This observation confirmed what Dr. Ball had seen stated—namely, that immediately before the convulsion there is a failure of heart-action.

Dr. A. A. Smith believed that hypodermic injections of morphine were of great utility in uræmic convulsions occurring in acute renal disease. In uræmic convulsions occurring as the result of an acute attack ingrafted upon chronic renal disease of not very long duration they were of great utility. But he believed that there came a time in the course of chronic degenerative changes in the kidney, and perhaps elsewhere, when the use of hypodermic injections of morphine were

FOLLOWED BY DISASTROUS RESULTS,

and to know exactly where to draw the line when they might be safely used in chronic Bright's disease attended by convulsions was very frequently a difficult question to be answered. He felt that where chronic Bright's disease existed, and the observer knew of its presence, and knew that it had existed for some time, hypodermic injections of morphine should be used with a great deal of care.

Dr. Kinnicutt asked if any of the gentlemen present had, in their personal experience, seen bad results that could be attributed to the hypodermic use of morphine in *acute uræmia*.

Dr. Smith said that in acute uræmic convulsions he

HAD NEVER SEEN ANY BAD RESULTS.

Dr. James B. Hunter had never seen any bad results from this method of treatment.

Dr. Robinson had seen bad results in hospital practice, where there was a certain amount of reason for believing that the convulsions were due to uræmic poisoning. He had not seen that the secretion from the kidneys was increased; the convulsive attack was not, apparently, arrested; the general condition of congestion was increased, without manifest improvement in the condition of the action of the heart.

Dr. J. B. Hunter thought that the symptoms described by Dr. Robinson could not be ascribed to the morphine.

Dr. Smith cited an illustrative case occurring in a child that had had scarlet fever. The urine was very much diminished in quantity, there was œdema, and the child went into convulsions. A hypodermic injection of morphine was given, and the convulsions ceased. Within twelve hours the patient passed *ten* ounces of urine, and within twenty-four hours, *sixteen* ounces. The child got well.

GOUT OF THE HEART (?).

Dr. Walker also reported a case in which the gouty diathesis played an important part in an otherwise hazardous illness.

"I was called to see Mr. A—— in February, 1886. He was a man of fifty, of sedentary habits, and in weight turned the scale at two hundred and fifty pounds. He was subject to frequent attacks of gout, affecting chiefly the smaller joints of the feet, but occasionally involving the larger joints of both extremities. These, from frequent experience, he had "treated himself," or, rather, had done nothing for them, except to maintain quiet, preserve warmth, and wait the relief that nature brought.

I saw Mr. A—— incidentally while visiting his child, and found him suffering with what he termed "gouty bronchitis." For this he had confined himself to bed. Two days subsequent he had been attacked with severe pain in his right side, at the border of the ribs, which cut short respiration and made every abdominal movement unbearable. He had slight elevation of temperature, and somewhat quickened pulse. His diathesis made me consider this a development of rheumatism affecting the diaphragm. A tightly fastened girdle gave a measure of relief.

The following day, however, the true character was manifest—namely,

A DIAPHRAGMATIC PLEURISY,

while in the progress of the disease the friction-sounds of plastic effusion were heard over the lower part of the right pleura. In twenty-four hours these râles were obscured by serous effusion to the height of four inches. Considerable pain and tenderness remained in the right hypochondriac region over the extent of the liver.

The serous effusion quickly subsided, the serum disappearing in four days. At this time the patient complained of cramps in the right calf. His wife stated that the muscle bulged out in a knot the size of her fist. Taking her description as given, I did not inspect the leg or thigh, and attributed the cramps to the supine position enforced by the pleurisy.

One day later the complaint was of fixed pain in the calf, which suggested examination of the femoral triangle, and I found the evidences of adhesive phlebitis. The leg and thigh swelled enormously, but in twelve days returned to nearly the natural size. While suffering from the phlebitis in the thigh and leg there was a good deal of pelvic pain and soreness on the right side, attributed to the upward extension of the inflammation.

Two days after the onset of the phlebitis the patient began to suffer from hiccough; at first at intervals, then more constantly, and even during sleep. The hiccough

lasted five days; for the three latter days almost without intermission. The hiccough was painless, but annoyed the patient by its persistence. The last two days, besides the hiccough, as often as once in two hours attacks of

LARYNGISMUS STRIDULUS

occurred of a minute's duration. To relieve the hiccough many means were tried. The faradic current applied at the back and over the epigastrium for an hour at a time seemed to be useful. Chloral given in five-grain doses was early administered, but an attack of laryngismus stridulus occurring immediately after the exhibition of a dose so prejudiced the patient that he refused to take it. Morphine, hypodermically, gave comfort, though the hiccough persisted even when the patient slept. In five days these attacks passed off, both of hiccough and laryngismus.

"Coincidently with the relief from hiccough the patient's leg had so improved that he was allowed to sit in a reclining-chair. He still complained of the pain in the right side of the abdomen. Palpation and percussion could detect nothing abnormal, and auscultation gave no sign. The thickness of the abdominal fat would have obscured anything. The patient continued to mend gradually, though having shifting pains in various joints. All morphia had been suspended and only tonics given. He was sitting in the reclining-chair, and was reading the morning newspaper, when a look of faintness passed over his face and he seemed to be for a moment unconscious. A physician living opposite was summoned, who pronounced him dying. Stimulants, ammonia and brandy, were given without effect. When I reached the house with my partner, Dr. Montague Swift, I found Mr. A——'s pulse 160, his respiration 40, his hands cold, his face pale and anxious, with pinched nostrils and drawn mouth. He looked like a man suffering from internal hermorrhage, while his expression was that which we consider indicates abdominal suffering.

Supposing death imminent I sent for Dr. Thomas, who had previously seen him in consultation, and later for Dr. D. M. Stimson. We all thought he could not rally from the collapse in which we found him.

From 9 P.M. to 7 A.M. I sat by his chair giving him brandy and digitalin hypodermically, and brandy with ammonia by the mouth. His pulse during the night was for hours so feeble and rapid that I could not distinguish it at the worst, but at six o'clock it was 160, at seven 140, and from that hour its improvement was steady. There was at no time any fluttering or disturbed action of the heart other than extreme weakness. The aeration of the blood was perfect and there was no duskiness of countenance, as would have been the case had circulation through the lungs been impeded. The mind was clear; motility unimpaired. In fine, there was no indication of

EMBOLISM OF BRAIN, LUNGS, OR HEART.

In default of evident cause the family were told that gout had affected the heart—a statement plausible to them, but which at the time did not seem to me to really explain the symptoms presented. My own feeling was that there had been an internal rupture; perhaps a slow, leaking aneurism, which the patient's corpulency concealed. But the after-history seems to have proved the gout-theory correct. It was the gouty poison overpowering the heart in its action; not as rheumatism seizes on the organ, exciting acute inflammation, but by nerve-influence only.

From this seizure Mr. A—— steadily convalesced. He had more or less of joint-pains, but no severity of attack. His chief subsequent annoyance was a return of pain in the right side of the abdomen from the liver downward. A free purgative removed scybalous masses, and the pain measurably ceased. The purgative was a shot in the dark, as palpation could detect nothing through the thick abdominal walls.

Before this case came under my observation I had looked upon the phrases "gout of the stomach" and "gout of the heart" (as distinct from inflammations of these organs) as names used to satisfy a patient's friends, but really conveying a false pathological idea.

"Several years ago I had a patient in whom the rheumatic poison so affected the brain that she was delirious for days, and approached a comatose state, suddenly to be relieved by the transfer of inflammation to a knee-joint. Put in this there was marked inflammation, and a subsidence of trouble in one part of the body with a transfer to another.

In the case of Mr. A——, in the light of its after-history, I feel inclined to attribute the symptoms—so grave that no one of the five physicians looked upon the patient as aught but a dying man—to the gouty poison, and to describe it as a layman would.

In pathology I supposed the poison exerted itself on the organic nervous centres, as no sign of acute inflammatory trouble was manifest either then or afterward."

DR. HUDSON said it had not seemed to him to be proved that pure diaphragmatic pleurisy could be diagnosticated.

DR. C. L. DANA reported the results of his experience with

GASEOUS INJECTIONS IN THE TREATMENT OF PHTHISIS.

He began the treatment in the middle of February last, and had employed it for eight weeks. It was too soon to give definite conclusions, but his experience in the technique of the operation might, he thought, be of some interest.

A brief synopsis of the reports on the treatment so far made by Bergeon, in August, 1886, and later by Cornil, Morel, Dujardin-Beaumetz, Bennett, and Hamon and Fougeray, was given.

Dr. Dana had given the injections in a number of cases, but had systematically followed them up in only three. These were all cases of catarrhal phthisis in the third stage. They were all men in age ranging from thirty to forty. They had all three decidedly improved since the treatment began. There was a gain in flesh and strength, with some diminution in cough and expectoration. The night-sweats were stopped in two cases, and the fever almost or entirely disappeared in all. In one case the improvement did not occur until two weeks after the injections were begun. Very similar improvements have been observed in other cases coming to the hospital.

The apparatus used was very simple. At first he used bisulphide of carbon vapor. The carbonic-acid gas was procured from a soda-water manufacturer. It was washed, and special instructions given to have it pure. It was bought compressed in cylinders. This was passed into a rubber bag holding about two gallons. From the bag the gas was passed through a glass cylinder containing a teaspoonful of bisulphide of carbon poured upon cotton. From the cylinder it passed through a tube and into the rectum. About a gallon of gas was injected at a time—at first once, then twice daily. The patient lies on the back, and the bowels are rubbed and kneaded during the operation, which lasts from twenty to thirty minutes.

The gas was smelt in the breath of one patient, but not in that of the others. It caused no pain, but did produce dizziness, and in one case nausea.

The results of the use of the sulphide were not very satisfactory, and after two weeks' trial pint-bottles of Sharon mineral water were substituted. This water, Dr. Dana found, corresponded fairly well in composition with the Eaux Bonnes water used by Dr. Bergeon. One bottle was sufficient to medicate about two gallons of gas. The three patients had been treated in this way for nearly six weeks, and as stated, they had all improved, one of them very decidedly. The gas was smelt in the breath and tasted by the patients. The speaker

thought that the results, though encouraging, were by no means brilliant, and believed that so far as facts at present go, we had better means of treating phthisis than by gaseous injections.

The composition of the Eaux Bonnes water used by Bergeon was given, as follows:

Bisulphide of soda	0.01150
Monosulphide of soda	0.00280
Hyposulphite of soda	0.00035
Carbonate of soda	0.00650
Silicate of soda	0.09520
Phosphate of soda	0.00070
Sulphate of soda	0.07637
Sulphate of lime	0.09975
Sulphate of potass	0.01353
Chloride of soda	0.10997
Chloride of lithias	0.02750
Organic matter	0.05707
Total solids	0.51180
Free H. S	0.00190

Dr. Robinson had tried gaseous injections in four or five cases in Charity Hospital. He used for mineral water that of the Blue Sick Spring, Ky.; but this was abandoned and the bisulphide of carbon substituted, and the patients were benefited somewhat so far as symptoms were concerned. There was a decided odor of the breath soon after an injection was given. In one case so much dyspnœa was produced that it became necessary to give up the plan of treatment. He did not notice that any special amount of pain was produced by the injections.

Dr. Hudson had made some inquiries concerning the gaseous injections made in cases of phthisis in Philadelphia, and had learned that they were in some cases administered by a druggist, the patients being walking patients, and it occurred to him that probably as much benefit came from the exercise, etc., as from the sulphuretted hydrogen which they received.

The Society then went into executive session.

MEDICAL SOCIETY OF THE COUNTY OF NEW YORK.

Stated Meeting, April 25, 1887.

Laurence Johnson, M.D., President, in the Chair.

Dr. L. Bolton Bangs read a paper (see p. 513) entitled

EXTERNAL URETHROTOMY—A PLEA FOR ITS EARLY PERFORMANCE IN MINOR TRAUMATISMS OF THE URETHRA.

The discussion was opened by Dr. F. N. Otis, who fully coincided in all that the author of the paper had said concerning the probable benefit to be derived from an early external operation in the cases of urethral injury under consideration. The most difficult cases came from traumatism, difficult from the very beginning throughout. Even the most thorough operations were apt to be followed by urethral trouble.

But when the tissues were in a comparatively good condition, and the canal was kept patent, the urethra probably could be left as well off as it was before the injury.

With regard to cases in which

LACERATURE OF THE URETHRA THROUGH FOLLICULAR ULCERATION

had occurred, they were of importance to the surgeon, especially in their early recognition. Not long ago he saw in one of the foreign journals an account of a hospital case in which there was a perineal inflammatory swelling, not attended by closure of the urethra. The catheter was passed without difficulty, and it was recorded as a case of perineal abscess not connected with the urethra, and poultices were applied, the surgeon declining to open it at that time. Extravasation of urine, however, took place and the patient died. Dr. Otis thought that not too much could be said in favor of an early external operation in such cases as that. The operation was a simple one, especially where there was no displacement of the urethra, and the patient has thereby been saved at once from the danger of extravasation of urine.

It was deceptive to suppose that, where a comparatively large-sized stricture exists, the urethra could not be ruptured. He thought that probably nineteen-twentieths of the cases of perineal swelling were due to this cause, and that the earlier they were operated on the better it would be for the patient. As to the safety of external urethrotomy, he fully agreed with the author of the paper.

Dr. E. L. Keyes had nothing to say in opposition to the views advanced by Dr. Bangs. He not only indorsed them, but wished to add all that the weight of his experience could add to the view that in cases of

MINOR TRAUMATISM OF THE URETHRA,

at least in the curved portion, the patient should be immediately subjected to perineal urethrotomy; that is, in cases in which, after traumatism, there appeared, immediately or subsequently, evidence of advancing inflammation about the perineal urethra, the operation should be performed and free drainage established, provided no extra harm could be done to the patient by the procedure. He thought that the experience of all would favor a large open wound through which free drainage could take place, rather than treatment by dilatation or divulsion. He believed that this was true concerning any stricture which was not easily controlled by possibly the simplest of all methods, that of gradual dilatation.

Undoubtedly perineal urethrotomy was a somewhat formidable operation in "the older days," and it was still somewhat difficult and tedious where it must be done without a guide; but he could hardly conceive of an operation more simple than perineal urethrotomy upon a guide, and the after-effects were of the simplest kind. Of course, in cases of infiltration of urine, with sloughing and extensive disease of the tissues, the patients might die despite the incision.

Dr. Keyes also believed that

GRADUAL DILATATION IS FALLING INTO DISCREDIT

in the treatment of old strictures in this part of the urethra. The advisability of *divulsion*, he thought, had been nearly given up. *Internal urethrotomy*, in this region, according to his experience, was disastrous and dangerous. He was free to say that he should vastly prefer, in any kind of stricture in the deep urethra, the *external operation* to any other method of treatment; for, in healthy subjects, the external method was nearly or entirely devoid of danger.

Dr. C. McBurney was glad to hear that the ideas set forth by the author of the paper were gaining ground among surgeons. He regarded the operation of external urethrotomy, for traumatism of any moment at all, as undoubtedly an exceedingly good one, and because it was

THE ONLY MEANS OF AVOIDING DANGERS WHICH WERE IMMEDIATE AND GREAT.

Up to within a very short time the tendency had been to neglect to interfere with a urethra that presented on the outside the outline of integrity. The dangers of internal urethrotomy in the deep urethra were well recognized, and it was probable that when a man received a kick in the perineum, for example, he was in a worse condition than the man who had the condition which had received the internal operation.

Besides, secondary dangers were avoided by the external operation performed *early*, before infiltration or suppuration had taken place, and before sinuses had formed in various directions. It was better to anticipate the dangers than to wait until they came.

With reference to the operation itself, perhaps something might be said which would mitigate its terrors to the patient and also to the surgeon. The operation was to provide for *perfect drainage from the bladder*, and nothing more. External urethrotomy, to him, did not mean

division of the stricture from the outside. Therefore it was unnecessary to divide the whole of the stricture. The opening could be made very small, without hemorrhage of account, or involving any important structures, and it would heal with the greatest rapidity and without any danger. A small operation performed behind or in the middle of the stricture in the deeper portion of the urethra gave as good results as a full incision made throughout the entire length of the stricture.

Dr. McBurney believed, however, that there were cases in which external urethrotomy was not required. In a case in which there was no evidence of laceration beyond the escape of a few drops of blood, no tumefaction, no infiltration of blood, where it was perfectly easy to pass a large instrument, and also, and more important, where it was perfectly easy to introduce a *small* instrument, meaning that there was rupture of only small superficial vessels, he would not perform external urethrotomy. He would pass a large, soft instrument, after both a large and small instrument had passed easily without detecting lacerated tissue, evacuate the bladder systematically, wash it out after each urination, and in a certain number of cases the operation could properly be avoided. But it was difficult to define this class more accurately.

Dr. Bangs, in closing the discussion, expressed his gratification at the unanimity of opinion with regard to the best method of treating these cases. He then related a case that came under his observation since the paper was written. At present it was difficult to classify all these cases, but he believed that when traumatism was present to the degree he had mentioned there was only one proper mode of treatment, which was to perform external urethrotomy.

Dr. George Thomas Jackson then read a paper (see p. 509) entitled

BALDNESS—WHAT CAN WE DO FOR IT?

Dr. George Henry Fox said that in some cases local treatment alone sufficed to remove the abnormal condition of the scalp on which the alopecia depended. In other cases there was a good condition of the scalp, and baldness occurred in consequence of other causes, such as exhaustion of the nervous system, etc., and in those cases a general tonic and hygienic treatment might produce restoration of the hair, or arrest its falling.

Then there were cases of *inevitable* baldness, beginning as a small spot upon the vertex, or going up from the forehead, and in which the only thing which could be done was

TO MAKE THE BEST OF IT.

He doubted whether any style of hat had ever had anything to do with causing baldness. In very many cases the cause had not been explained.

Dr. W. M. Carpenter asked Dr. Fox and Dr. Jackson to express their opinions concerning the utility of either cutting the hair short or shaving the head in cases of falling of the hair after typhoid fever, for example.

The President took exception to Dr. Fox's statement with reference to stiff hats not being a cause of baldness, and expressed the belief, firmly, that the wearing of stiff hats had a great deal to do with the occurrence of baldness.

Dr. Fox doubted whether baldness was any more common now than it was before stiff hats were worn.

With regard to cutting the hair or shaving the scalp after fevers, unless there were special reasons for so doing, he believed that, in the majority of cases, where the hair could be attended to properly, it had better be let alone, and that its growth would be longer and stronger than it would be after cutting or shaving.

Dr. Jackson agreed with Dr. Fox with reference to cutting the hair or shaving the head after fevers. He would also remark that the English had always worn stiff hats, and it had not been shown that they were particularly the subjects of baldness.

The Society then adjourned.

NEW YORK NEUROLOGICAL SOCIETY.

Stated Meeting, April 5, 1887.

C. L. Dana, M.D., President, in the Chair.

Dr. T. S. Robertson read a paper (see p. 517) on the use of

ANTIPYRINE IN MIGRAINE, PYREXIA, ETC.

Dr. E. C. Spitzka had seen antipyrine once act magically in relieving the headache of a cerebral tumor. On repetition of the dose, however, the remedy failed.

Dr. B. Sachs had been using antipyrine for a considerable time in headaches and migraine, and he had found it to act very satisfactorily.

Dr. W. R. Birdsall and Dr. R. F. Weir

REPORTED A CASE OF SARCOMA OF THE BRAIN (OCCIPITAL LOBE), CAUSING HEMIANOPSIA, REMOVED BY OPERATION.

Dr. Birdsall gave the history of the case, of which the following is an abstract: The patient, a Hebrew, aged forty-two, first came under his observation, October 16, 1886. He had always been healthy, until the summer of 1886. He denied injury to the head or venereal disease. In August, 1886, he observed for the first time unsteadiness of gait, and had a severe attack of vomiting. Soon after, diplopia for distance, and increased awkwardness in walking were observed; also a disagreeable sensation, akin to numbness, in the right leg, hand, and shoulder, but not in the face. This and the diplopia were transitory. Headache, usually frontal, was present occasionally, but never severe. October 7, 1886, he consulted Dr. F. C. Seguin, who made a diagnosis of tumor of nasal aspect of right occipital lobe, involving, primarily, the cinereus, extending downward toward the tentorium cerebelli, and perhaps also upward toward the para-central lobule (leg-centre). Treatment: Large increasing doses of potassium iodide.

From January to July, 1886, his diplopia disappeared, and never returned; his gait improved somewhat. In October, 1886, Dr. Birdsall found double optic neuritis, most marked in left eye; left pupil somewhat larger than right; no diplopia; no ocular paresis evident. His movements were clumsy rather than ataxic, at times being accurate, at others wide of the mark, especially in left extremities; gait slow and uncertain. There was frequent expectoration of a viscid saliva. Left hemianopsia, Dr. Birdsall thought, could be accounted for only by a destructive lesion in the neighborhood of the gyrus cinereus of the right occipital lobe. The locomotory disturbances appeared to him to be due to pressure-effects of a tumor on structures below the tentorium; thus implying a growth of considerable size. His disturbance of equilibrium continued to increase in a very irregular manner. His intellect was not impaired. His family observed no change in his character or disposition. He was extremely uncomfortable mentally. An operation was proposed in February, 1887.

The operation was performed by Dr. Weir. Regarding the tumor, Dr. Birdsall said it was of so large size, so much of the occipital lobe was compressed by it, that the case was of little value for determining the limitation of the visual area in the occipital lobe. The growth was a sarcoma, originating in the meningeal structures, producing destruction of the cerebral tissues by pressure alone. Absence of severe headache should be noted, as it is usually a prominent symptom of tumors involving the meninges. One of the most important lessons that the study of cerebral tumors taught was, that growths remaining limited to the meninges may attain a large size before disturbing the function of neighboring parts of the brain. In these cases regions away from the tumor may give signs of importance before those in contact with the tumor. The extreme fatality of intracranial neoplasms was high warrant for taking an extreme surgical risk. The co-operation of neurological science and surgical art, in

the present state of each, could hardly fail to build up an experience which would in some cases save life that would otherwise be lost.

Dr. Weir described

THE OPERATION,

which was performed March 9, 1887. Special antiseptic precautions, prior to and during the operation, were taken. The periosteum was raised, two openings were made with the trephine, the first one inch above the occipital protuberance and the same distance from the median line; the other immediately above. The openings were joined, and enlarged by the rongeur forceps to two and three-fourths by two and one-fourth inches. The dura mater was divided two-thirds the extent of the bone-opening, its retained attachment being toward the median line. The tumor was at once recognized and enucleated. It was necessary, on account of its large size, to incise it, and press out some of its substance before it could be completely detached and removed through the opening. A great deal of venous bleeding took place, and sponges were stuffed in for temporary pressure. The cavity was inspected by the electric light, and showed that a great amount of pressure had been exerted upon the brain; the falx was crowded to the left of the median line; the tentorium was depressed to a horizontal line. The tumor weighed five and one-fourth ounces. It measured three and one-fourth by two and three-fourths by two and one-half inches. One of the bleeding points was found to be in the region of the straight sinus, not free enough to be from that vein, but probably from the pedicle of the tumor; the other, apparently arterial, probably from a terminal branch of the posterior cerebral artery. The flow from each was readily checked by direct pressure, and it was determined to control them by packing the cavity with iodoform gauze. The dura mater was partly united over the gauze by loose sutures. The operation was well borne until the final enucleation of the tumor, when the pulse fell, apparently from loss of blood. Some hours afterward slight diverging strabismus of the left eye was noticed; blood-stain appeared through the dressings; the pulse was weak; stimulants were given; the patient was restless. At night transfusion of a saline solution was made, with temporary improvement, and the dressings were removed to control hemorrhage, which was seen to be taking place in a small stream, but the pulse again gave out, and nothing further could be done than reapply pressure in the supposed direction of the hemorrhage. Death occurred at 2 A.M. An autopsy was not allowed, but in the lower part of the brain-cavity was seen a large collection of coagulated blood.

Dr. Weir said that, in another case where the hemorrhage was from vessels too deeply situated to apply a ligature, he would control it by leaving on clamp-forceps, to be removed after a period of twenty-four or forty-eight hours. The opening, although large, was not sufficiently large to enable him to remove the tumor entire. It was intended to adopt Macewen's method, and employ bone-grafts.

Dr. Weir had recently

REPLACED THE PIECES OF BONE

removed by the trephine in a case of epilepsy, the opening being nearly two and one-half by three inches, and now, about seven weeks after the operation, the wounds had healed save one, and the bones were felt to be solid, and were painless. Brief reference to the cases of tumors of the brain for which operations had been performed were made.

REPORT OF A CASE OF CYST OF THE BRAIN, WITH OPERATION.

Dr. Graeme M. Hammond related the case. The patient, a married woman, complained of severe pain an inch above the right ear, and had left hemiplegia. At the time her symptoms began she was about twenty-nine years of age; she had had four children; during the progress of her disease she had a fifth child. All were strong and well. Her sickness lasted about two years and a half. It commenced by sudden loss of consciousness, and convulsions limited to the left side. The left side of the face became, and remained, paralyzed. About a year later she noticed gradual loss of power in the left arm; things dropped from the hand. At the end of another year the left arm was completely paralyzed. She then noticed increasing weakness in the left leg. When Dr. Hammond first saw her she was able to stand, and walk slowly. While the paralysis was extending she had four or five epileptic seizures, confined to the left side. Headache developed about the time the legs became affected, grew more constant, and was described as agonizing.

She denied syphilis. Physical examination showed loss of motion on the left side of the face, tongue, and soft velum; of the left arm, and partial loss of motion in the left leg. There was no disturbance of sensibility of any kind. The reflexes were exaggerated on both sides. Sight, hearing, smell, and taste were normal. Choked disk on both sides was observed at a subsequent examination.

Under treatment the headache was controlled to a considerable extent. Dr. Hammond's diagnosis was probable cerebral tumor, involving the cortical or subcortical substance of the motor centres. An operation was refused. The patient grew worse until March 20, 1887, when her husband asked that the operation be performed. Dr. Spitzka then saw the patient with him, and made two examinations. He rather coincided in the diagnosis. The operation was performed on the Wednesday previous. Dr. M. Josiah Roberts assisted at the operation, removing the portion of skull by his electro-osteotome. Four buttons were removed by the electro-trephine; these were connected by straight lines made with the circular saw. The diameter of the opening was over two inches. A crucial incision was made through the dura. A hypodermatic needle was introduced in different directions, but no fluid was withdrawn. The dura was closed, a drainage-tube was introduced, the skin-flaps were sewed up, and the patient was put to bed. She lived only twenty-one hours, remaining unconscious after the operation. Prior to the operation she had become completely paralyzed in the left lower limb, she had delusions and hallucinations, she talked incoherently, and bed-sores developed.

The autopsy showed little hernial protrusion at the wound; the cortical substance here was thin. Incision through the motor region revealed three cysts in a line deep in the white substance. The fluid in the cysts had been only partially examined; it was serum, and contained broken-down brain-substance. The cysts were close together and in a position to affect the face, arm, and leg-centres. He could not explain why the syringe failed to bring forth fluid unless it was that the cysts were too deeply situated, or the needle passed between them. He added to the clinical history that the head was drawn to the right side the last three days of life.

DISCUSSION.

Dr. E. C. Seguin was partly responsible for the operation in the first case, but it seemed the patient would not live more than two or three months without it. He expected to find a large tumor, but was somewhat surprised to see it encapsulated and non-parenchymatous. During the early history of the case the symptoms pointed to destruction of brain-tissue.

Dr. E. C. Spitzka, referring to the case reported by Dr. Birdsall and Dr. Weir, said that an artery, large enough to cause fatal hemorrhage, entered the gray and white substance of the right occipital lobe. It had been overlooked in many text-books.

Dr. Roberts explained how the circular saw could be

used without injury to the brain, and described the operation of the electro-osteotome.

Dr. Starr suggested the desirability of an analysis of reported cases of cerebral tumors, for the purpose of determining their rapidity of growth and size.

Dr. R. L. Parsons read a paper entitled

NOMENCLATURE IN PSYCHIATRY: "MONOMANIA" OR "OLIGOMANIA.

The reader advocated the use of the term "oligomania" in place of "paranoia," primary monomania, partial insanity. Discussion was postponed.

Army and Navy News.

Official List of Changes in the Stations and Duties of Officers serving in the Medical Department, United States Army, from April 24 to April 30, 1887.

Woodruff, Charles E., First Lieutenant and Assistant Surgeon (recently appointed). Ordered for duty at Fort Wayne, Mich. S. O. 96, A. G. O., April 26, 1887.

Official List of Changes in the Medical Corps of the United States Navy for the week ending April 30, 1887.

Atlee, L. W., Assistant Surgeon. Ordered to the Receiving Ship Vermont.

Biddle, Clement, Passed Assistant Surgeon. Detached from the Naval Academy and ordered to Marine Rendezvous, Philadelphia, Pa.

Ashbridge, Richard, Passed Assistant Surgeon. Ordered to the Naval Academy.

Hudson, A., Medical Inspector. Ordered to the U. S. Ship Trenton.

Hibbett, C. T., Passed Assistant Surgeon. Ordered to the U. S. Ship Trenton.

Decker, Corbin J., Assistant Surgeon. Detached from the Receiving Ship St. Louis and ordered to the U. S. Ship Trenton.

Medical Items.

Contagious Diseases—Weekly Statement.—Report of cases and deaths from contagious diseases reported to the Sanitary Bureau, Health Department, for the week ending April 30, 1887:

	Cases.	Deaths.
Typhus fever	0	0
Typhoid fever	5	2
Scarlet fever	55	14
Cerebro-spinal meningitis	1	1
Measles	69	5
Diphtheria	120	51
Small-pox	5	2
Yellow fever	0	0

Aniline Inhalations in Phthisis.—Professor Kremiansky's method (*Journal*, p. 579, March 12, 1887) was recently tried by Dr. Nesteroff, of Moscow (*Russkaia Meditsina*, p. 151, No. viii., 1887), in the case of a lady suffering from consumption, whose condition was not at all such as to cause immediate apprehension; in fact, she was about to start for a southern health-resort. Under inhalations of aniline dissolved in oleum gaultheriæ, the patient's state grew steadily worse; and after two weeks of the aniline treatment she died. Dr. Nesteroff emphatically declares that he will never venture to repeat the experiment; he maintains that the method is not only useless but directly injurious.

The New "Specific" for Diabetes.—Dr. Martineau gives full details in the last number of the *Annales Médico-Chirurgicales* of the treatment advised by him in diabetes. It was in consultation with the late Professor Rouget that he learned the formula which he now publishes with so much confidence. The patient in question had been the subject of diabetes for some years, and was suffering at the time from cerebral hemorrhage. Dr. Rouget proposed that they should not modify his diet in any way beyond restricting in a slight degree the use of farinaceous food, fruits, and sugar, and that he should drink during meals, and in the intervals of thirst, arsenicated lithia water, prepared as follows: In the upper part of a Briet apparatus of one litre for making aërated water were to be introduced 20 ctg. of carbonate of lithia, and a tablespoonful of the following solution: Arseniate of soda, 20 ctg.; distilled water, 500 gm. This water to be drunk at meals mixed with wine, and the contents of the recipient to last for three meals.

The Danger of Hypodermatic Injections of Morphine in the Treatment of Strangulated Hernia.—Dr. Routier had operated twice for strangulated umbilical hernia; the first operation was performed twelve hours after the strangulation and was a perfect success. He was not called to the second until five days after the onset of the trouble, and found gangrenous points scattered along about thirty inches of intestine; he resected the entire affected part, but the patient soon died. This patient had been treated with injections of morphine, which had relieved the pain and arrested the symptoms, and thus caused the grave error of permitting fatal temporization. He has ascertained that the use of injections of morphine is very common in strangulated hernia. Various cases have been published in favor of this treatment, but none are convincing; it is impossible to understand how morphine can favor spontaneous reduction; in that case it would be necessary for the strangulation always to lie in the ring and for the relaxation of the muscles to have an influence upon it, which is doubtful. Nothing, then, is further from being proven than the good results of this treatment; on the contrary, its dangers are self-evident, since, by diminishing pain and vomiting, it permits temporization, which is always exceedingly dangerous, for the operation is acknowledged to be the more dangerous as it is delayed. The treatment of strangulated hernia by morphine should be very energetically rejected, and it should be held as an axiom that a patient with strangulated hernia should not be left until relieved.—*Annals of Surgery*, April, 1887.

Turpentine Stupes for Tonsillitis.—Dr. Longstreth recently showed the class at the Pennsylvania Hospital some cases of tonsillitis which had simply been treated by applying turpentine stupes to the neck, with gratifying results.—*Col. and Clin. Record.*

Belladonna in Prurigo Senilis.—Belladonna given internally will often give very satisfactory results in prurigo senilis. It may be given with nux vomica as follows: ℞. Extract. nucis vomicæ, extract. belladonnæ, āā, gr. ¼. Ft. pil.—Sig.: Take morning and evening.—*Col. and Clin. Record.*

Infantile Constipation.—A very successful remedy for this is podophyllin, in small doses; iridin may be combined with it with good effect. Make a tincture of the following: Podophyll. resin, gr. viij.; iridin, gr. v.; spt. ammon. arom., ʒj. Digest for several days, and filter. From one to two drops of this may be given at bedtime on a small piece of loaf-sugar, or the dose may be combined in mixture along with syrup of orange. This is the dose for a child of one year and under.

"Disease" is the name given to one of the swift yachts of the Burlington Ice Yacht Club. The Disease must be a kind of running disorder—possibly mastitis.

The Medical Record

A Weekly Journal of Medicine and Surgery

Vol. 31, No. 20 NEW YORK, MAY 14, 1887 Whole No. 862

Original Articles.

DIGITAL EXPLORATION OF THE KIDNEY WITH REPORT OF THREE CASES.[1]

BY WILLIAM T. BELFIELD, M.D.,

GENITO-URINARY SURGEON TO COOK-COUNTY HOSPITAL; PROFESSOR OF GENITO-URINARY DISEASES, CHICAGO POLYCLINIC.

OF some two hundred and fifty cases of nephrectomy heretofore reported, about forty-four per cent. have died from the effects of the operation. The chief causes of death have been: 1, Shock (forty-two per cent. of the fatal cases); 2, uræmia (fourteen per cent.); 3, peritonitis (twenty-one per cent.). Improvement in the results of renal surgery seems therefore to require means for the avoidance of these three chief dangers.

The chances of fatal shock are decreased by early operation, before the patient becomes exhausted and the destruction of kidney-tissue extensive. This self-evident proposition is illustrated by the fact that while about eighteen per cent. of all (250) reported nephrectomies have died of shock, yet after twenty-four excisions of sound kidneys in healthy persons—removed for wounds of the loin or ureter, mobility, etc., not a single death occurred from shock.

The greatest obstacle to the early surgical treatment of renal lesions has been *faulty diagnosis*. Such cases are frequently regarded as lumbago, sciatica, hip-joint disease, Bright's disease, and (especially) cystitis, for a long time before the true seat of the lesion is detected or even suspected.[2] The symptoms commonly ascribed to cystitis may be also produced by pyelitis; and as cystitis is still too often regarded as an entity, a disease—instead of a mere symptom requiring explanation—the patient is treated for "chronic cystitis." Finally, months or years later, a lumbar swelling or other symptom reveals the renal origin of the difficulty.[3] Meanwhile the patient has become so enfeebled that he succumbs to the shock of an operation that could have been safely borne at an earlier period. Early exploration of the kidney—a relatively safe operation—has in many cases not only solved a perplexing problem in diagnosis, but also, by drainage of the pelvis, has relieved a difficulty which at a later stage would have required nephrectomy—a formidable operation. Moreover, a preliminary drainage has been shown to be a valuable factor in diminishing mortality after nephrectomy; thus, of 73 nephrectomies for suppurative lesions collected by Gross, 12 were made after previous exploration, with but 1 death; of the remaining 61—without previous nephrectomy—31 died.

Uræmia rarely occurs after any renal operation, provided the second kidney be present and in healthy condition. While commonly associated with nephrectomy, one of the cases described shows that uræmia may be inevitable after simple nephrotomy; hence a necessary preliminary to any renal operation should be an attempt to ascertain the functional condition of the opposite kidney. In the female this can often be accomplished by catheterizing the ureter, after Pawlik's method; in the male, probably the best (though still an uncertain) means is Silbermann's instrument for compressing one ureter. The statement that the abdominal incision, by permitting palpation of the opposite kidney, obviates the possibility of uræmia, is fallacious; for in many cases kidneys which are indistinguishable by the finger, or even by the eye, from normal organs, are extensively invaded by disease—inflammatory, tuberculous, or calculous. The pair of kidneys exhibited by Dr. Steele this evening are signal examples—normal in size, contour, and consistence, yet each extensively tuberculous; palpation through an abdominal incision could have detected nothing abnormal in either of these kidneys. Certain gross renal lesions could doubtless be so detected, though at greatly increased risk.

To summarize: 1. Surgical affections of the kidney are frequently long masked by symptoms of cystitis, etc.; differential diagnosis may be practically impossible without palpation of the kidney.

2. Digital exploration of the kidney through a lumbar incision is, with proper precautions, almost free from danger, comparing favorably with perineal exploration of the bladder.

3. This operation, performed at an early period, may arrest a morbid process which would otherwise require nephrectomy; even if it secure no other immediate result than accurate diagnosis, it diminishes the danger from subsequent nephrectomy.

4. Before undertaking to incise the pelvis, the functional activity of the other kidney should be demonstrated by examination of its secretion.

S. M.——, widow, aged twenty-six, has long suffered from dyspepsia; for a year past has been much troubled with headache, pain in loins and left thigh; menstrual intervals were shortened to two or three weeks. In March, 1886, urination became unduly frequent and often painful; pus and sometimes blood appeared in the urine. In June began to have nausea and vomiting; also disturbances of vision, spots before the eyes, etc. Pain, of varying intensity, became constant in back, abdomen, and left thigh; has been confined to bed ever since. On admission in October she is emaciated and very feeble; requires morphine constantly; tenderness over both kidneys, especially left; no swelling nor logy feeling. Urination every half-hour or oftener, the act accompanied with severe pain at the bladder-neck. Urine varied from nine to twenty-seven ounces daily, and contained much blood, pus, and numerous sharp uric-acid crystals, often arranged in rosettes and surrounded with pus-corpuscles. The right ureter was catheterized, and urine found free from pus and blood.

November 29, 1886, the left kidney was exposed by transverse lumbar incision; to the eye and the finger it was normal; needles passed into the pelvis detected no foreign body. The pelvis was thereupon opened by cautery and explored with the finger; the mucous membrane was rough and ulcerated, and numerous clots of pus were evacuated. Aside from persistent vomiting for a few days, recovery ensued without notable interruption; the lumbar fistula was closed on the twenty-first day. The patient has since been free from her former symptoms and is regaining flesh and strength; the urine is free from pus and blood.

The case presented several interesting features.

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[1] Read before the Chicago Medical Society, March 7, 1887.

[2] An English surgeon recently removed both ovaries, at two operations, without relief to symptoms which disappeared at once after the extraction of a renal calculus by another operator.

[3] This masking of pyelitis by bladder-symptoms is particularly common in cases of primary renal tuberculosis, in which lumbar pain is rarely pronounced unless the ureter becomes obstructed by clots of pus. As five such cases have come under my observation within six months, I suspect that they are less rare than is generally supposed.

Though the symptoms—hemorrhages, suppression of urine, and extreme prostration—were such as might be expected from calculi in both kidneys, yet they were induced by aggregations of uric-acid crystals—the largest smaller than pinheads—in *one* pelvis. The menstrual interval was shortened, as the disorder became aggravated, to three, and then two weeks; after the operative relief they were again lengthened to four weeks. Especially noteworthy was the direct sequence of the urinary upon the digestive derangement. Several times during convalescence symptoms of indigestion—gastric distress and distention, belching of gas, etc.—occurred, and were invariably followed within a few days by pain over the kidney, irritability of the bladder, and the appearance of sharp uric-acid crystals and some pus in the urine; with the subsidence of the digestive disturbances the urinary function again became normal.

George F——, aged thirty, was struck by a cable-car, November 28, 1886, sustaining a laceration of the hand and various bruises. The patient had left his bed, though still sore from the contusions, when, December 11, after straining at stool, he passed a large quantity of bright blood with the urine, and had severe pain in both loins; temperature, 102. Ergot, gallic acid, and opium internally, ice locally, and absolute rest, were ordered. The hemorrhage ceased in seventy-two hours, but pain and tenderness over right kidney and pyuria persisted with varying intensity and same temperature. December 21st, he had several slight chills, followed by profuse sweats, fever, headache and vomiting; deep inspiration caused great pain in right loin.

December 22, a transverse lumbar incision was made for exploration of right kidney; there was found extensive adhesive inflammation, matting together the colon, peritoneum, and peri-renal fat; extravasated blood under the kidney-capsule; a laceration in the posterior surface of the kidney, extending transversely from the lower insertion of the pelvis about an inch into the renal substance; opposite this fissure were some blood-clots and about half an ounce of clear fluid. As the location prevented stitching of the capsule, drainage-tubes were inserted to the point of laceration. For several days the temperature remained high, and pus and urine were profusely discharged; then improvement was noted; the wound was healed in a month and the patient was discharged well a week later.

C. L——, aged forty-eight, enjoyed excellent health until two years ago, since which time he has suffered from gradually increasing frequency and pain in urination; urine has contained pus, and sometimes a little blood. A year ago he passed two small calculi, as large as buckshot. During last three months has had occasionally some pain in left groin and testicle, lasting some hours—evidently mild renal colic. Has been treated for Bright's disease and cystitis. When placed under my care, January 5, 1887, he was rather emaciated, urinating every half-hour, with pain in bladder and glans penis; urine alkaline, thirty to forty ounces daily, containing much pus and some blood-corpuscles; some tenderness on firm pressure over left kidney, none over right. There was evidently pyelitis on left side, of either calculous or tuberculous origin; a single examination of the pus revealed no bacilli.

January 26th, left kidney was exposed by lumbar incision; it was found to be above average size; at the junction of pelvis and ureter was a hard mass. To determine its nature the kidney was incised; the finger in the pelvis found this cavity dilated, and at a few points ulcerated; the hard mass consisted of thickened tissues, partly occluding the ureter. As the disease was evidently tuberculous and the condition of the opposite kidney unknown (though suspicious in view of the enlargement of the left), extirpation was deemed injudicious. The patient was not depressed by the operation, and was sitting up in bed on the third day. On the fifth day, however, the urine was tinged with blood, and decreased in amount; the usual symptoms of uræmia followed, ending in death from that cause on the eleventh day. A partial autopsy showed the left (explored) kidney slightly tuberculous and deeply congested; the right kidney extensively tuberculous; bladder and prostate normal.

In this case there was nothing in the history or physical signs to indicate disease of the right kidney; since this is the rule in tubercular, and not infrequent in calculous disease of the pelvis, the case teaches the necessity of examining the urine from the opposite kidney before opening the pelvis of the one under suspicion. The exciting cause of the uræmia was apparently not the slight wound in the substance of the working kidney, but the intense congestion following the sudden relief of habitual pressure in the distended pelvis; the case was, in fact, identical with those in which diminution of urine, renal hemorrhage, or even uræmia, follows a few days after the first catheterization in cases of enlarged prostate, etc., where the accustomed distention of bladder, ureters, and pelves is suddenly relieved—improperly termed "urethral" or "catheter fever."

THE CLAIM OF MORAL INSANITY IN ITS MEDICO-LEGAL ASPECTS.[1]

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In the experience of the writer, which is largely based upon nearly three hundred cases of insanity, it has not been his fortune to see one case which answers to the description, given in the books, of moral insanity. The three hundred cases cited have all been studied with care for the purpose, chiefly, of certifying, under the law, to their mental condition. In most of them the antecedent history was attainable, and in many of them any unusual developments in their subsequent careers would probably have reached the writer's knowledge. These cases presented, I believe, all the recognized forms of insanity as laid down in all the classifications now in fashion. They came from all grades of society; some were committed to pauper asylums, some to the most select private and public institutions, and a few to an institution for feeble-minded children. They were representative of a very large insane population, because the writer formerly had the advantage of certifying almost all insane paupers of Philadelphia, and continues, through the kindness of the medical officers, to make out certificates of insanity for many patients coming from other States to asylums in or near this city, as well as to be retained not infrequently in private consultation for the same purpose. Records of all these cases have been preserved, and especially interesting features or unusual symptoms have been noted. In addition to the above cases the writer has studied a large number of brain cases during five years' attendance upon the Nervous Dispensary of the University Hospital. In an experience of this kind it could not be expected that no evidence of moral obtuseness or obliquity had been observed; far from this, the most diverse and extraordinary perversions of the moral ideas have been noted, just as perversions of all other cerebral activities have been recorded, but no case has been found in which that pure and simple dislocation of the moral nature existed, without lesion of the understanding, which we are led to believe by some writers is a not unusual form of insanity—especially of criminal insanity. It will be, therefore, the object, in part, of this paper, to compare briefly some of these cases of the writer with a very few of the most important cases mentioned by some of the most prominent writers who have described moral insanity.

I conceive this subject to have importance in two aspects. It has importance, first, to the medical nosolo-

[1] Read before the Philadelphia Medical Jurisprudence Society, April 12, 1887.

gist, or him who classifies and describes disease. It has still more importance to the medical jurist, or him who studies the actual legal relations of disease. With the first the subject is apt to degenerate into a mere quibble about *terms*. To the latter it presents itself as the most responsible question of *fact*. It thus appears that a brief definition of terms is of primary importance, while later it will be appropriate to make a short clinical analysis of cases and draw from them their proper deductions in medico-legal science.

It is not my intention in this paper to indulge in metaphysical abstractions, but it is imperative at once to consider briefly certain terms and distinctions which are constantly applied to this subject by medical writers, and which terms they have indubitably borrowed from the metaphysicians and theoretical psychologists who have been for generations thrashing this ground over and over again to find little wheat and much chaff. According to most of these speculators the mind is divided into (1) the intellect, (2) the emotions, and (3) the will. The "mind" itself is regarded by some of them as something immaterial, individual, and distinct from the organic brain. Each of these *faculties* has come to be treated in most systems as though it were a distinct thing in itself, with its own peculiar functions and diseases, just as the heart is a distinct viscus of the body apart from the arm, which, in turn, has its own partial independence. That such a division may have facilitated the study of abstract psychology, and may even yet furnish many convenient terms and much smooth rhetoric for the medical nosologist, is not to be doubted, but I think I am not mistaken when I say that the distinction is an entirely arbitrary one, and that there has never been offered an iota of evidence in anatomy, physiology, or pathology that these so-called "faculties of the mind" are anything more than varying phases or modes of action of one identical substance—the cerebrum. So thoroughly engrafted upon medical science is this creed of the metaphysicians that our books abound with classical descriptions of "intellectual" insanity as apart from "emotional" insanity, and a disease of "the will" has even been depicted under the dreadful name of *abulimia*. This latter so-called disease I saw exhibited in a poor woman who was suffering with melancholia, and had been cruelly treated and deserted by her husband. She stood in a corner of the room; she apparently could not speak nor perform any ordinary action. She was certainly without will or the active manifestation of it; but who can doubt that her mind was overwhelmed with depressing and stupefying ideas in which her intellect and emotions were hopelessly jumbled? Another case has been recorded of a man who sat immobile for a long time, having apparently lost his metaphysical "will," but who was found to be harboring the delusion that his body was glass and his only safety was in rest. The last effort of this doctrinaire school seems to have been in the direction of the conscience, or moral nature. Some call the moral nature a part of the emotions, while others give it a distinct place in classification, and this has led to corresponding confusion in moral insanity. With some it is purely an "emotional" insanity, with others it is "instinctive," with others it is a sort of *abulimia*, or loss of will, as in the "impulsive" varieties, etc. It is thus seen that there is much looseness with confusion of terms here, which is always suggestive of a confusion of thought. It is also apparent to my mind that in the cases reported by these writers there has been no strict, searching analysis of symptoms, or else the symptoms have been put down with strong bias in favor of the artificial classification employed.

A few weeks since a man came to the writer in great distress of mind, and said that as he was shaving one day recently the thought suddenly occurred to him that he might cut his throat, or possibly his wife's throat. He could not account for the thought, and neither could he cast it off, but was constantly haunted by the fear that he would yet commit one or both of these terrible acts of violence. If this man were to commit these acts he would probably be called by some writers a case of *impulsive* or *motiveless* insanity, in which, according to their favorite theory, his intellect would not be affected. Now it seems to me that this patient had a so-called imperative conception, which was delusional in character, and that he was in fact in a state of mind not unlike the hypochondriac who is constantly terrorized by the dread of what may be. This imperative conception *is* his motive, and if he falls a victim to it he is insane. The act would be as *intellectual* as any brain-act.

The truth about the brain-hemispheres, as far as we know it, seems to be that they are the seat of a special, highly differentiated reflex act. That they are, in fact, highly organized and developed masses of nerve-substance—which have probably by a process of evolution grown from the likeness of one of the inferior ganglionic masses to their present huge proportions and superior dignity, and that they are in no way exempt from the law, governing all nerve-centres, that upon excitation alone from without there comes a reflex act from within. This is, in other words, the law that upon sensation comes reflection, and is practically what was taught by Locke and Condillac, long before the era of Charles Bell or Marshall Hall, which is a curious confirmation of the truth that philosophic insight has often gone before scientific inquiry to demonstrate a fact. This highly specialized reflex act goes under a great variety of names, and is called memory, thought, intellect, reason, meditation, imagination, passion, will, talent, genius, etc., according to the point of view taken by the outsider rather than because of any known anatomical or histological changes or differences which take place in the insider. In other words, this special act has been given a legion of names according to its many and various phases, while in itself it can always be reduced simply to the condition of a reflex act, *i.e.*, perception, comparison, and action. This specialized act of the cerebral masses was named, I believe by James Mill, *ideation;* and as doing away with the innumerable artificial terms of the pseudo-psychologists, and being applicable to every conceivable mental act, it is the one for which I think medical writers ought especially to be thankful. From whatever point of view we take the human mind (by which I mean the human brain) we see it always reducible to this one term; for whether it meditates upon the highest problems of destiny or is tossed (metaphorically) with the stormiest passions of love or hate, it is essentially in the process of comparison, leading from perception to action, which conjoint act is this special process called *ideation*. Its diverse *manners* of acting, according to the character of the external objects which excite it, do not alter the essential unity and individuality of this special act. And yet it is according to its various modes merely that the classical and artificial distinctions have been made, by which even yet some practical alienists endeavor to steer their course, instead of by a more rational study of the identical acts of the brain itself—whose confusion, exaltation, depression, perversion, or disorganization can alone constitute either a scientific or a legal insanity.

I have never yet seen in actual practice a case of so-called moral insanity, or read the descriptions of such in the books, that it has not seemed easy to me to detect the fallacy which ascribes to such cases a normal intellect amid the ruins of the shattered soul. The following case was seen in Moyamensing Jail some six years ago, and has once since made some stir in the newspapers. A. B—— had fallen from his horse in boyhood and injured his head. He had preserved fair brain-power, and when he grew up had learned a profession, at which he attempted, without success, to practise. But he had grown up, nevertheless, a crooked stick, and was regarded by acquaintances as odd, ugly dispositioned, unreliable, and a crank. Upon a superficial view he fulfilled to the letter

the rôle of a moral lunatic; in fact he did out-herod Herod, and was a much better specimen of his class than is usually reported. He lived comfortably at the expense of his unmarried sisters, and talked so well that persons associated with him for months and did not suspect his mental integrity. He was affable to strangers, but of such rude and hasty temper to his family as to cause them sometimes alarm lest he should assault them. At last he began to excite a disturbance in the family about his father's estate, which had been divided and settled equitably years before, and announced that he had been defrauded of his share. In order to bring his sisters to terms he deliberately began to malign the reputation of one of them—who was a most estimable wife and mother—and set up an atrocious scheme of blackmail. When this became unendurable his family had him committed to jail to keep the peace, and in jail I signed his certificate, with a brother physician, to send him to Norristown Asylum. On examination of this man I found he had little correct reasoning power on any subject in which especially his own interests and relations were concerned, and that his disgusting egotism had culminated in a series of delusions of persecution in which he was as fixed as the earth in its orbit. If this man's *intellect* was not affected, it must indeed have been of the metaphysical variety in a literal sense, and have kept out of sight far above the physics of Moyamensing Jail when I saw and examined him.

He who has read Pinel on "Insanity," and has also a taste for the romance of history, has no doubt been pleased to find that author's science so illustrated with the events of the French Revolution. That momentous period made many men mad, and Pinel gives us many glimpses into some of the most tragic, but least known, acts of that historic cataclysm. I doubt, however, if any event he describes is more instructive than the breaking of the September mobs into the Asylum of the Bicêtre, and the liberation by them of a moral lunatic. It was announced in Paris that the asylums were unjust prison-houses, wherein were incarcerated many victims of kingly and priestly oppression, under the pretence of insanity. They would liberate these unfortunates. When they ransacked the Bicêtre, this patient loudly proclaimed that he was sane and a victim of tyranny. The keeper said he a was lunatic without disturbance of intellect, but of very bad passions—but the keeper came near being killed for his unphilosophic remark. The mob released this patriot prisoner, and led him in triumph through the streets. "The sight of so many armed men, their loud and confused shouts, and their faces flushed with wine, roused the madman's fury. He seized the sabre of his next neighbor and wounded several of his liberators. Had he not been promptly mastered he would soon have avenged the cause of outraged humanity. The savage mob then thought proper to lead him back to his cell, and with shame and reluctance yielded to the voice of justice and experience."[1] Pinel described this case as an example of mania without delirium, and subsequent writers who rely upon him have mistaken him, I believe, in considering that he meant a purely *emotional* insanity. I think he meant a mania without fixed, systematized delusions, and if he were here to-night I do not believe that he would say that this madman of the Bicêtre had an undisturbed reason.

Dr. Prichard, of England, is usually credited with being the progenitor of the school who teach the doctrine of moral insanity, although Dr. Rush, of Philadelphia, clearly indicated the same psychological distinctions. Prichard records seventeen cases as illustrative of this class of patients, and as a superstructure can be no more secure than the foundation upon which it rests I will briefly call your attention to a very few of these frightful examples. One patient was a literary man who was married to a literary wife, and became so suspicious that the world would say his wife wrote his books that he refused to let her know what he was writing; he acquired strange habits, placing everything in a certain order whether in his own or in other people's rooms. He would run up and down his garden a certain number of times, spitting alternately on one side and the other in regular succession. He spent much time rolling up little pieces of writing-paper, which he used for cleaning his nose. He committed several acts of violence, argued in favor of suicide, and finally drowned himself in a canal. This man evidently had delusions and insane suspicions, and his little foolish tricks are strongly indicative to my mind of failure of brain-power and possibly commencing dementia; that there was a strong element of melancholia beneath the surface of his disease appears evident to me from his committing suicide. Another of these moral lunatics is recorded as having the delusion that all the persons living in the house with him disliked him, and he confessed that he heard whispers of malevolence and abhorrence. This case was evidently one of the worst forms of insanity—the veritable insane demon who harbors delusions of persecution and hears irritating and deriding voices. To call such a man a moral lunatic without affection of his "intellect," is a use of terms which to me is worse than an error in definition—it is an injustice to humanity. Another case was a sober and industrious farmer, who became wild, excitable, full of schemes and absurd projects; bought cattle and stock for which he had no use, and a carriage which was much more elegant than he was accustomed to; he called on a man in the middle of the night to take him out to survey his farm. This man is reported to have recovered in an asylum, but my diagnosis of his case at this distance is *dementia paralytica* with an early remission, which deceived his physicians into the belief that he had recovered his lost conscience. This case I regard as an important pointer, for it suggests that many of these so-called moral lunatics are simply cases in the early stages of grave forms of insanity, who render themselves conspicuous by that erratic conduct and change of character which are early symptoms, and difficult often of interpretation. The whole texture of the brain is changed, and that specialized act which has been called ideation is perverted. The sensations received do not fall into a sound and active cerebral machine to be reflected again as conscious and intelligible acts, but the brain-acts are perverted, weakened, and confused in all the relations and affairs of life. This suggests to me the difficulty often of following these abnormal brain-processes. There is no more difficult problem set before the physician than to unravel the complexities of the insane brain. Its suspicions are so varied and its associations so complex, that it seems sometimes as though it might require the prescience and insight of the greatest of poetic or philosophic minds. A patient whom I examined, and who afterward perished in the burning of the Blockley Insane Department, refused to eat because he had cursed the giver of food in his heart, but the connection of his conduct with a concealed delusion was for a long time not apparent. Another patient of the writer tore up her Catholic prayer-book, apparently in an unseemly rage of moral imbecility, but when questioned closely acknowledged the delusion that anyone who said the same prayers as she said would deprive her of a certain mysterious power which she possessed; and another patient, who had some extravagant religious delusions and a hyperæsthetic conscience, and who, nevertheless, without apparent reason slandered and abused her husband in the most heterodox manner, was at last brought to the confession of the astounding delusion that her husband had grown tired of his normal sexual relations with her, and intended to cut another hole in her abdomen in order that he might enjoy a change!

It is to be noted that moral insanity or imbecility is described especially in children, even more than in adults, and this is significant. In children cerebral activity is

[1] Pinel's treatise, p. 154.

more concerned about objects which immediately affect themselves, their comfort, amusements, and various gratifications. There is, in fact, much of the animal in them. They do not think or reason much about abstract and remote objects, relations and interests which claim the attention of the grown man, and about which the adult lunatic is apt to form his delusions. The child is pleased with a trifle, deeply interested in his animal appetites, and much harassed by discipline. The man is involved in the deadly struggle for existence, and is brought face to face with the anxious problems of fortune, friendship, religion, and destiny. To the deficient intellect of the imbecile child, bent upon self-indulgence, the greatest good and the readiest methods of self-assertion may seem to be obtainable by theft, incendiarism, and insubordination, while in the man the more complex delusions of persecution and religious melancholia fill up the measure of his woe, just as fidelity and worship widened the mental horizon of his perfect health. I speak now of those children who are real imbeciles, whose minds, if thoroughly tested, would show defective brain-power, and who are called moral idiots with good intellects because apparently their skulls are not as crooked as their conduct. I do not refer to the spurious cases who are occasionally reported, as, for instance, the kleptomaniac whose case is quoted by Bucknill and Tuke, who made bargains with the merchants that for a nominal sum of blackmail he would not steal from them. I do not call such a scamp by a Greek scientific word of five syllables, and I fear that his heaven-sent destiny is the county jail. Neither do I refer to such cases as these eminent authors describe in a patient who was a pyromaniac, and was such a bad girl that she resembled a serpent in her movements. "Her skin," we are told, "was also spotted like a common species of snake!" It is impossible for me to determine from this whether a spotted skin is a symptom of moral imbecility or whether it is a custom of serpents to set fire to houses, and in the double doubt I am willing to assign the tale to the other snake-stories of the newspapers.

Erotomania is not an insanity at all as described by many writers. Although increase and perversions of the sexual appetite are not uncommon in different forms of mental disease, I have seen several curious cases in which the trouble was entirely intellectual, rather than moral or sexual. A middle-aged buxom woman came one day, bewailing her uncontrollable lust, which she said she had endeavored to gratify with a number of men, although living an apparently happy and virtuous life with her husband. She was excitable and emotional as she talked, and easily became confused, almost incoherent, in her language. The longer she talked the greater the number of her paramours became, and the more exaggerated the details of her illicit relations grew. It was soon apparent that her self-accusations were delusions, and when questioned closely on the subject she broke down with the statement that her mind was so confused that she did not know whether she told the truth or not. I saw an old lady recently who was weeping constantly, and telling every person she met that she had committed adultery with a worthless fellow about town; but the good woman's age and appearance were enough to acquit her Lothario.

In the Annual Report of the Elmira State Reformatory, N. Y., for 1886, there is a most interesting account, by Dr. H. D. Wey, of an experimental class in physical culture. This class was composed of twelve inmates of the institution for the purpose of determining how far their cerebral condition could be improved by frequent baths, calisthenics, and physical culture. They seem to be as nearly moral imbeciles as could be well picked out, and in his admirable description Dr. Wey has taken the pains to give us an analysis of not only their "moral" but also their "intellectual" acquirements. Their ages were from nineteen to twenty-nine. The moral capital of these twelve men is summed up as follows: One was convicted for assault, five for burglary in the third degree, one for grand larceny in the first degree, three for grand larceny in the second degree, one for rape, and one for attempted rape. The doctor says truly that the offence of such men when against property is usually such as calls for no great amount of ingenuity, but when committed against the person is of an aggravated form and brutish in details, suggesting uncontrolled passion. This experimental class were serving an average sentence of seven and one-half years. Most of them had been intemperate. Not one had learned a trade. Their environment before their crimes was bad, many having had intemperate parents, and one an insane, and another an epileptic, mother. In physiognomy many in their photographs are typical of the crime class, and in two the receding forehead is almost typical of idiocy. The faces express mental hebetude and moral obliquity. The "intellectual" capital of these men is summed up as follows: The ignorance of some was so great that they were unable to tell in what country they lived. They were without purpose or ambition, and seemed simply to exist. "An idea of their mental attainments can be formed when it is said that one could neither read nor write; one barely do either; four understood the successive steps necessary to work an example in long division, but could never obtain the correct answer; while the balance were wrecked upon the shoals of rudimentary arithmetic from notation to simple division." It certainly cannot be said that the intellectual status of these men is any better than their moral status. Their whole cerebral activity is very bad.

The class of lunatics from whom are recruited most of the criminal insane comprises the patients with elaborate, systematized delusions. These are the monomaniacs, or, as the Germans call them, the cases of original insanity, or *Primäre Verrücktheit*. This has sometimes been called the "insanity of character." Its roots are deep in the very construction of the man's brain; he was born with a bad brain, which is bound not to perform properly its function of ideation. It will not elaborate good thought or sound sentiment in whatever environment it is placed and whatever sensations stimulate it to its special reflexes of comparison and action—at least thus we are taught to believe of these congenital fools. Just here is where a fallacy, I think, creeps into the admirable logic of those who have described this class. While it is true, in every sense, that there is a class of men born with poorly constructed brains, it is not so applicable a truth that they must necessarily be forever in the grip of a fate which holds them all equally irresponsible lunatics. Men are born with every grade of brain-power, from the microcephalic idiot to the sage whose cerebral masses weigh sixty ounces. Character is a varying quality, not always strictly in proportion to the amount and quality of a brain, but also in proportion to the character of the environments of that brain. If there is any truth in the doctrine of evolution, or any force in our systems of education, it seems to me to rest upon this truth. Otherwise we are all the most unfortunate fatalists, and, in a literal sense, the sins of our great-grandfathers are visited upon us without amendment or expiation possible on our parts. Hence this doctrine of original insanity, while attractive to the ear and eye, bears a fallacy with it if extended too far. Insanity is not a mere peculiarity of character, else this doctrine may extend its long arms until it embraces all the oddities and eccentricities and notions and fallacies and sins of mankind, or until one-half of the human race is caught by this *octopus* of the extreme school of alienists. Insanity must be conceded to be something more definite than this, especially criminal insanity, wherein arises the question of responsibility under the law. If Erskine's test of delusion is applicable at all, it is certainly to this class of lunatics, for insane delusion, fixed and logical, is the essence of their disease; it supplies the motive, usually, of their crimes (whether its connection with the crime can be traced or not); it dominates their lives and perverts all their conceptions of moral, social, and legal relations. Unless such a positive perversion of cerebral activity can

be shown it seems very doubtful if these "primary cranks" have passed from the borderland of folly and wickedness into the neighboring field of irresponsible lunacy. "No one," says an old legal writer, "is of perfectly sound mind but the Deity;" but while this may be conceded to the pessimist it can never be admitted as a scientific axiom in medical jurisprudence. We must have some secure ground to tread upon, and some certain landmarks when we come to pass judgment upon a man's mental health and his criminal responsibility, otherwise the decision may be no more admirable than that which declared General Beauregard insane after the first battle of Bull Run because he had lost the fight and yet was seen playing in an idle manner with a parrot in his tent; or the judgment which proclaimed Edmund Burke, the orator, to be an emotional lunatic because, when they brought him the favorite horse of his dead son, he threw his arm on the animal's neck and wept. The Philistines could see in this no more than the morbid sentimentalism of the author of "Tristram Shandy" when he wept over the agonies of a dying jackass!

The writer cannot but feel, in common with his profession, a prejudice against hard and fast dogmatic tests of insanity. It is in this respect that the physician has all along been apt to part company with the lawyer. This arises in part from the directly opposite positions taken by the two in regard to the case in issue. The physician, searching for disease, may be too apt sometimes to construe slight and irrelevant symptoms as indicative of what he seeks, while the lawyer, upon the bald assertion of the law that every man is in normal health until he is proved to the contrary, is always too prone to resist anything but the most glaring and unmistakable signs. It thus happens that the medical definition has sometimes been stretched so wide that it includes cases which shock the common-sense of the most intelligent, while the legal tests have been made so narrow and unscientific that it is difficult to include in them some of the most patent cases of insanity. The test of "delusion" is, I believe, in some forms of insanity an applicable one, but it certainly will not include all classes of mental disease, while the test of knowledge of "right and wrong" is founded, I think, upon a misconception of the unity of the brain-function not unlike that which has supplied the doctrine of moral insanity. A scientific diagnosis ought to be made in court just as in a hospital. I believe that the conception, and rigid adherence to the conception, of the cerebrum as an individual unit, whose special act is always a reflex process of ideation, tends to a satisfactory definition and classification of insanity, as well as to an intelligible application of our knowledge to the solution of medico-legal questions, much superior to anything attainable by the distinctions of the metaphysicians or the arbitrary tests of the judges. This process of ideation may be depressed or exalted (as in melancholia or mania), it may be perverted (as in monomania), it may be confused and incoherent (as in a variety of forms), or it may be utterly disorganized (as in dementia), but I certainly have not yet seen a case of insanity in which it was not in one or the other of these states.

SOUTHWEST CORNER WALNUT AND FORTIETH STREETS,
PHILADELPHIA, PA.

IODOL IN DIPHTHERIA.—In order to test the statements of Dr. Mazzoni, Dr. L. I. Stembo, of Vilna, tried (*Proceedings of the Vilna Medical Society*, No. V., 1887, p. 114) the local use of iodol in seven cases of diphtheria, two of which were severe. The drug was applied either alone, in powder, or in the form of a solution (℞. Iodoli, ʒss; liq. vini, 3 ss; glycerini, 3 iijss.). All the patients recovered after treatment lasting from four to six days. The advantages claimed by Dr. Stembo for iodol are its complete harmlessness, its freedom from unpleasant smell or taste, the painlessness of its application, and the absence of any untoward secondary effects, such as loss of appetite, nausea, vomiting, etc.

CONTRIBUTION TO THE STUDY OF CEREBRO-SPINAL FEVER.[1]

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CEREBRO-SPINAL fever was probably unknown prior to the present century. It was recognized and described in Europe in 1802, and since then numerous epidemics of it have occurred in isolated localities in both continents. It was in the first half of this century regarded as a painful and dangerous epidemic malady, attacking chiefly the young, occurring suddenly and unexpectedly in places widely separated, among people engaged in diverse occupations, and living under different conditions as regards soil, climate, and food. After some weeks or months it suddenly or gradually, but completely, disappeared, so that no more cases occurred for a series of years; but since 1860 it has appeared in this country in another phase. It is becoming established, or, to use the phrase commonly employed in medical literature, naturalized in the cities of the United States. For some years not a week has passed, or but few weeks have passed, without the report of deaths from this disease in New York, Philadelphia, Jersey City, and Chicago—Chicago being the city in which it has caused the largest number of deaths in proportion to the population. During last year it occurred in Cincinnati, Minneapolis, Denver, Norfolk, Boston, Worcester, New Haven, Albany, Syracuse, Auburn, Milwaukee, Wilmington, Detroit, Baltimore, Charleston, Toledo, Mobile, Salt Lake, Grand Rapids, Providence, Chattanooga, Hartford, New Orleans, Fall River, Richmond, Knoxville, and Nashville. It is probably already permanently established in Cincinnati, St. Louis, Minneapolis, Newark, and San Francisco, since deaths from it have been reported in these cities during many consecutive weeks. It appears to be extending most rapidly, and causing the largest number of deaths in the cities along the line of western travel from New York. Whatever may be the explanation, it is extending much more rapidly in the Northern than in the Southern cities, or the cities in the late slave States. In the Southern cities usually not more than one death is reported during the week, and only in a very few weeks during the year.

In New York City, prior to 1866, only four deaths were announced from what might have been cerebro-spinal fever, since in 1838 two deaths were reported from so-called spotted fever, one in 1850, and one in 1861. What was the nature of this spotted fever is now a matter of conjecture. In 1866, 18 patients died of cerebro-spinal fever within the city limits, and not a year has passed since without deaths from it, and in the last few years not a week. From 1866 to 1872 the annual deaths from this disease varied from 18 to 48. Commencing in December 1871, and continuing during the first half of 1872, a severe epidemic occurred, producing a large mortality, destroying the eyes of some, and leaving permanently deaf many who otherwise fully recovered. In this epidemic the physicians of New York were fully aroused to the importance of the disease which was causing so much suffering, and which attacked the lower animals, especially the jaded horses of the city car and stage lines, not a few of them dropping down in harness, so suddenly did the attacks occur. In 1872, 782 deaths occurred from it within the city limits, chiefly of children. This epidemic appeared to produce a greater dissemination of the disease, and more firmly establish it in the city; for since then the annual deaths from it have varied between 97 in 1878 and 461 in 1881. In Philadelphia cerebro-spinal fever began in 1863, causing 49 deaths in that year, and it has never been absent from that city since. Professor Stillé states that between 1863 and 1882 it caused 2,049 deaths within the city limits. In Philadel

[1] Abstract of a paper read before the Northwestern Medical and Surgical Society of New York, March 16, 1887.

phia, as in New York, it has for some years produced a nearly uniform weekly mortality.

The etiology of cerebro-spinal fever is a matter of great interest. That it is produced by a micro-organism is generally admitted. Doctor A. Fränkel, as well as other European microscopists, have made a study of the bacteria found in the blood and tissues of those affected with it. At the meeting of the Berlin Medical Society, held February 12, 1883, Herr Leyden showed, under the microscope, specimens of micrococci found in a case of cerebro-spinal fever.[1] They had an oval shape, were mostly in pairs, and were faintly tremulous. They resembled those found in pneumonia and erysipelas; but Leyden did not think them identical. At the same meeting Herr Baginsky related cases which seemed to show that in some instances the exciting cause of cerebro-spinal fever and pneumonia might be identical.

Dr. V. O. Pushkareff,[2] connected with one of the barrack infirmaries in St. Petersburg, states that in five cases of croupous pneumonia, in which cerebro-spinal meningitis occurred as a complication, he discovered in the pus taken from the cerebral meninges swarms of micrococci, whose appearance under the microscope seemed identical with that of Friedländer's pneumococcus. They were either isolated or in groups of two, seldom in four, having distinct capsules, and they were absent from the fluid taken from the meninges in simple pneumonia. He was able to cultivate the micrococcus taken from the meningeal pus, and the cultivated microbes, like their parents, presented an appearance identical with that of the pneumococcus. Moreover, Eberth, in a case of meningitis following pneumonia, believes that he found the same micrococci in the lungs and in the liquid exuded from the inflamed pia mater; Fränkel[3] also states that he obtained from the purulent exudation in the pia mater in a case of meningitis, occurring with pneumonia, a microbe resembling that in the pneumonic exudation. From the investigations of so many competent microscopists, therefore, it appears that the microbe found in the exudate of the meninges in cerebro-spinal fever, and which is supposed to sustain a causative relation to this disease, bears a close resemblance in form to the pneumococcus, if it be not identical with it. But we would infer, from the fact that croupous pneumonia is such a universal disease, occurring in localities where there is no cerebro-spinal fever, that the causes of the two must be different; or if there be a form of croupous pneumonia which is produced by the same microbe as that of cerebro-spinal fever, the pneumonia which is of universal occurrence may have a different origin. The microbic causation of cerebro-spinal fever needs further investigation, which it will doubtless receive, before positive statements can be made.

Physicians have studied cerebro-spinal fever as an idiopathic or primary malady; but its occurrence as a complication of other diseases has not received the attention which it requires. Fagge, in his recently published "Practice of Medicine," calls attention to this fact, and especially to its occurrence as a complication of croupous pneumonia, fifteen cases of which occurred in Erlangen, and he alludes to its complicating pleurisy, tonsillitis, and scarlatinal nephritis. I have seen it occur as a complication of typhoid fever, in which there could be no doubt as to the diagnosis of the primary disease, and also as a complication of the intestinal catarrh of infancy.

It is evident, from the nature of cerebro-spinal fever, that wherever it occurs the full number of cases is not reported. Some cases terminate so quickly in convulsions and death that a clear diagnosis is not made. I might cite a recent case of this kind, occurring in one of the institutions, in which the diagnosis was not made until the autopsy disclosed the nature of the malady. Those who have seen much of cerebro-spinal fever and are familiar with its symptoms will, I think, often recognize this disease in cases which are reported in the journals under other names; such as *infantile cerebral paralysis*, *hemiplegia cerebralis spastica* of Heine, or Strümpell's *poliencephalitis acuta*. In a recent number of THE MEDICAL RECORD the case of a child of four and a half years is detailed, who was suddenly seized with eclampsia and high fever, followed by loss of speech and right hemiplegia. The case is reported under the heading "Infantile Cerebral Paralysis," but the symptoms so closely resembled those of certain cases of cerebro-spinal fever that there can be little doubt in my mind that this was the disease. Paralysis or aphasia, suddenly occurring, is not unusual at an early stage of cerebro-spinal fever. Thus a boy of ten years, treated for cerebro-spinal fever in 1878, was unable to move his legs one hour after the commencement of the attack, and in 1882 I attended a girl of three years, with the same disease, who lost her speech on the second day of the fever and did not recover it until the lapse of two and a half months. These remarks are made to show that probably the published statistics of cerebro-spinal fever only give approximately the number of cases. Perhaps, also, the mistake is sometimes made in the opposite direction, and what are cases of some other form of meningeal or cerebral disease are regarded as cerebro-spinal fever.

Many monographs have been published on cerebro-spinal fever, as it occurs in the epidemic form, and but little attention has been bestowed on the symptoms or character which it presents, or the changes which it undergoes when it occurs as an endemic or naturalized disease. The material of many of the papers has been obtained by observing epidemics and studying cases in rural localities. The naturalized disease must, of course, be observed in the cities, for there is no rural locality, so far as I am aware, in which cerebro-spinal fever is permanently established. In New York the naturalized disease differs in some respects from the form exhibited in the epidemic of 1872, and in other epidemics throughout the country. The naturalized disease appears to be accompanied by a less profound blood-change. Although every year seeing a considerable number of cases, I have not in the last ten years seen one with the livid spots upon the surface, due to subcutaneous extravasation of blood, which were so common in the epidemic of 1872, and which have been common in epidemics both in this country and in Europe, so that they have given the name "spotted fever" to the malady.

It is well known that in the epidemic form of cerebro-spinal fever the attack is abrupt and with little or no premonition. The exact moment of its commencement can be stated, but in some instances in the naturalized disease the attacks seem to me to come on more gradually, so that a day or more may elapse before we are certain that the sickness involves seriously the cerebro-spinal axis.

Some writers have expressed the opinion that the time in the year or the season influences the occurrence of epidemics of this malady; but the frequency of the naturalized disease seems to be pretty uniform in the different seasons and months. Thus, in this city, the reported deaths from cerebro-spinal fever in 1883 were as follows:

January	20	July	20
February	24	August	13
March	24	September	17
April	18	October	15
May	30	November	10
June	19	December	13

The bulletins of the Health Board for 1886, which I have been able to obtain covering thirty-three weeks, show that in every week the number of deaths from cerebro-spinal fever has been nearly the same, varying from two to six or eight. In the spring, summer, autumn, and winter months the rate of deaths was nearly uniform.

[1] Deutsche Med. Wochenschrift, April 4, 1883.
[2] Ejenedelnaia Klin. Gazeta, April 21, 1885.
[3] Deutsche Med. Wochenschrift, November 13, 1886.

My observations lead me to think that the younger the child the more frequently is cerebro-spinal fever overlooked, and some other disease diagnosticated. Nevertheless, the statistics of this city show that there is a larger number of fatal cases under the age of one year than in any other year, and the number of deaths gradually diminishes as the age increases. Thus, in 1883 the ages of those who died from this disease were as follows:

Under one year	57	Twenty to twenty-five years	7
One to two years	31	Twenty-five to thirty years	3
Two to three years	22	Thirty to thirty-five years	4
Three to four years	12	Thirty-five to forty years	3
Four to five years	9	Forty to forty-five years	1
Five to ten years	37	Forty-five to fifty years	2
Ten to fifteen years	18	Fifty to sixty years	1
Fifteen to twenty years	15	Over sixty years	1

The weekly bulletins of thirty-one weeks in 1886 give the ages of fatal cases of cerebro-spinal fever as follows:

Under one year	28	Fifteen to twenty years	7
One to two years	20	Twenty to thirty years	10
Two to three years	18	Thirty to forty years	4
Three to four years	7	Forty to fifty years	3
Four to five years	6	Fifty to sixty years	2
Five to ten years	16	Sixty to seventy years	4
Ten to fifteen years	6		

Not a few cases occur, in this city, in infants of the age of three or four months. An infant of four months died of cerebro-spinal fever in the New York Infant Asylum, the nature of the disease not being known until it was revealed by the autopsy.

Another interesting fact in reference to this disease, as it occurs in New York City, is that, although the city has a wide area, it occurs in every part of it. Thus the death-statistics in 1883 show that deaths occurred from cerebro-spinal fever in every ward except the First—the largest number, to wit, 39, being in the Nineteenth Ward, and the next largest, 20, being in the Seventh Ward. The death-statistics of thirty-three weeks of 1886—the statistics of the remaining nineteen weeks not being in my possession—show that deaths occurred from cerebro-spinal fever in all the wards except the Second, Third, and Twenty-fourth—the largest number, 24, being also in the Nineteenth Ward, and the next largest, 15, being in the Seventh Ward. Therefore cerebro-spinal fever has extended over the entire city, and, so far as we now see, is as firmly established as is diphtheria. These two scourges, admitted into this great and growing metropolis during the professional life of physicians now in active practice, are, from present appearances, likely to increase rather than diminish, notwithstanding sanitary regulations. We must submit to the inevitable fact that as they have desolated many families, producing an immense amount of suffering and blighting the hopes of parents in the present generation, so they will continue in full activity and probably increasing prevalence in the future, unless those who succeed us discover some more effectual way of preventing their occurrence.

The statistics, therefore, of this city show a wide diffusion of the specific principle of cerebro-spinal fever. If this disease have, as is believed, a microbic origin, the microbe has extended over the length and breadth of New York, and it has found conditions equally favorable for its development and extension in Jersey City, where for many months it has been as prevalent and severe as in this city. It is a remarkable fact, in reference to cerebro spinal fever, many times appearing in its history, that of two adjacent localities having apparently the same conditions as regards soil and climate, and with the same diet and occupations of the inhabitants, one is scourged by it while the other nearly or quite escapes. While New York has suffered so severely, Brooklyn has thus far nearly escaped. In the latter great city, with its population of 600,000, I find that in 1883 only two deaths from cerebro-spinal fever were announced. The wide diffusion of the specific principle of cerebro-spinal fever over New York island, adjacent portions of Westchester County, and across the river in Hudson County, New Jersey, in which county are Jersey City and Hoboken, contrasts with marsh miasm, which is indigenous in portions of the same localities, but has always been confined to limited areas.

Such are some of the more conspicuous facts relating to the establishment of cerebro-spinal fever in New York, and what is occurring in this city is probably also taking place in the other American cities where this malady has become naturalized. In some of these cities, as Chicago, the death-rate from cerebro-spinal fever is larger than in New York. Are the European cities undergoing similar experiences?[1] Professor E. Henoch, of Berlin,[2] describes a non-tubercular meningitis occurring among children, which he states is more frequent than is commonly believed. It is a protracted disease, attended by alternate aggravation and abatement of symptoms. It generally begins abruptly, with active fever, intense headache, frequent vomiting, and is attended by rigidity of the nucha, cutaneous hyperæsthesia, and sometimes contraction of the muscles of the extremities. After many weeks, during which the mind of the physician alternates between hope and despair, a majority of the patients, seen by Professor Henoch, gradually recovered. The writer adds that the true nature of this meningitis is unknown. Berlin, if I am not mistaken, was visited by an epidemic of cerebro-spinal meningitis in the spring of 1885, and I would ask the distinguished professor, whom we all honor for his contributions to pædiatric literature, if he is not now seeing and treating the naturalized disease.

Clinical Department.

A CASE OF COMPOUND COMMINUTED FRACTURE OF THE SKULL, AND EXTENSIVE CEREBRAL LESIONS WITHOUT CEREBRAL SYMPTOMS.

Dr. James S. Carpenter, of Pottsville, Pa., reports the following case: "John M——, a brakeman, about thirty-eight years of age, while coupling cars, had his head caught between the bumper of one of them and a heavy log of wood that had been jolted forward from the next car. He received several large lacerated wounds of the scalp, and a compound comminuted depressed fracture of the skull in the left parietal, temporal, and orbital regions. He walked quite a distance before falling, though bleeding profusely from his wounds. After being temporarily cared for, he was sent to his home, a distance of thirty-five miles, where he was operated upon by Dr. John T. Carpenter, assisted by Dr. D. W. Bland and the writer. The patient was comatose, with stertorous breathing, pupils contracted and insensible to light, and so restless that considerable restraint was necessary to keep him in bed. The pulse was 60, and the temperature subnormal. At first glance it seemed as though the whole of the left side of the skull, at a level with the ear, had been carried away. The scalp was extensively lacerated, and through the several openings cerebral matter was constantly oozing, while there was a depression, extending from the middle of the left supraorbital ridge to a point about midway between the anterior and posterior regions of the skull, into which the hand could easily be laid. The fragment of the left frontal bone had been driven downward and backward, and was partially rotated, so that its anterior surface alone was visible. It required considerable force to effect the removal of this fragment, as it had been driven into, and was very firmly held by, the body of the sphenoid. The second piece removed was a part of the sphenoidal wing. Like the first fragment, this was imbedded deeply in the brain mass, and after its removal, one could distinguish, with the index-finger,

[1] Schmidt's Jahrb., No. 8, 1886.
[2] Zur Pathologie der Meningitis cerebro-spinalis.

the body of the sphenoid and could make out the clinoid processes. The third and last fragment removed was a portion of the parietal bone. This had been driven so far into the brain as to escape detection, until the writer, wishing to determine for himself the extent of the brain injury, discovered it just over the petrous portion of the temporal bone. The driving in of this fragment had, of course, injured the meningeal artery, and on its removal quite a severe hemorrhage occurred, which was controlled by packing lint down into the wound close to the bone. The patient bore the operation well, and was still under the influence of the chloroform when it was completed. Carbolized dressings were applied over the wound, and an ice-bag was kept to the head. Consciousness was fully restored by the operation, and the patient was able to get up to urinate, and put on, almost unaided, a clean shirt. In fact, so fully convinced was the patient that he would recover that he wished to discharge his physician from any further attendance. During the three following days the patient's mental condition was good, the vision was unimpaired, and the temperature was normal. On the fourth day after the operation the temperature rose to 102.5°, there was some pain in the head, and the patient was restless. The next day there was muttering delirium, followed by coma, and death occurred five days after the operation.

"No post-mortem examination could be obtained. Most of the injury caused by the accident was dealt to that part of the brain whose surface boundaries may be defined as the fissure of Rolando and that of Sylvius, in which area are located many important centres, the destruction of which should have given rise to certain well-defined symptoms, but which the history of the patient does not show to have existed. At no time after the removal until the day before the patient's death was there noted any paralysis, either facial or of the extremities, nor was aphasia present. Indeed, so marked was the improvement in the patient's condition, and so complete was the absence of unfavorable symptoms, that it was a difficult matter to persuade the family of the unfortunate man that recovery was impossible."

POISONING FROM EGGS.

Dr. A. Brothers, of this city, reports the following: "On April 16th the family of Mr. S—— had supper at 7 P.M. The meal consisted principally of eggs which had been boiled that morning and allowed to remain all day in the warm kitchen. Although it was noticed at the time that the eggs had a bad odor, still they were eaten by the father and four of the children, ranging between two and twelve years of age. The mother and the remaining two boys did not partake of them. Within an hour every one of the five who had eaten the eggs became sick. I was sent for at 11 P.M. and found them suffering from symptoms evidently due to acute irritant poisoning. Prostration was very marked. Retching was present, and there was frequent vomiting. The matter vomited consisted of bad-smelling food and mucus, strongly tinged in one case with blood. Cramps referred to the stomach caused several of the children to cry out from time to time with pain. Thirst was extreme, but the water taken to quench it at once excited vomiting. Diarrhœa, with yellow watery movements having a strong odor of rotten eggs, was present in all the cases. Stupor, with a desire to be left alone, was also a prominent symptom. After a while the father and two of the children passed into a condition of collapse, and it looked as if they might die at any moment. They lay with the eyes half closed, showing the whites of the eyeballs. The pupils in some were contracted, in others dilated. The extremities were cold and the skin was covered with a clammy sweat. The pulse in the father was about 70, but extremely soft and compressible, and at one time almost imperceptible. In the children the pulse ranged between 120 and 180. The temperature in most of the cases was subnormal. After several hours, improvement set in, and next day they were all out of danger. In the treatment of the cases I was assisted by Dr. J. Horn. After emptying the stomach by the use of sulphate of zinc and washing out the stomach in one of the older children, calomel in mucilage was given to clean out the intestinal tract. For the vomiting occurring after this and also to quench the burning thirst, ice proved to be of great service. When the cases passed into a condition of collapse, heat was applied to the extremities, tablets of digitalin were given by the mouth, and brandy was administered hypodermatically."

GONORRHŒA AND STRICTURE.

Dr. W. S. Richardson, of Marlborough, Mass., writes: "Does stricture cause irritation, or irritation cause stricture? The talk is all about stricture causing irritation. It increases irritation no doubt. The idea seems to be that if the stricture is removed the irritation will go away. It is a common thing for a sensitive urethra to contract so that a catheter cannot be passed till the urethra becomes habituated to its presence. The constant irritation of a gonorrhœal inflammation the urethra *never* gets accustomed to till the inflammation begins to subside. In every case of gonorrhœa the inflammation is a constant stimulus to contraction. When the irritation is removed, if it is removed soon enough, there is no more contraction. If, for any reason, the inflammation stays for any length of time, from two to six months, there is that constant tendency to contraction—the urethra trying to eject the cause of irritation. It is likely that this continued effort will be followed by the proliferation of the elements of the submucous tissue at certain parts of the canal. This idea suggests a treatment for gonorrhœa or gleet with stricture. In the treatment of a chancroid we seek to produce a healthy unhealed surface by using one or two strong applications, and then heal this surface by continued mild applications. With hard resisting strictures there is no doubt an organic change, but if a medium-sized instrument can be passed and applications made and the irritation removed, the stubbornness of the organic (?) stricture will not be troublesome. Has success in a few cases made one observer an enthusiast over a *false* notion; or is there some sense in the above theory? There has been some trouble somewhere or there would not be so much talk about the difficulty of curing gonorrhœa and stricture."

MARGINAL PLACENTA PRÆVIA.

Dr. J. M. Baldy, of Philadelphia, writes that the report of Dr. Brown's case in a recent issue of The Medical Record calls to his mind a similar case occurring in his own practice. "Mrs. W——, colored, aged thirty-two; married eleven years; has had seven children. She had expected to be confined in about two months, but thought she might possibly be sooner, as she had been bleeding freely at times for the past few weeks. I explained to her the probability of there being a complication, and she went home with the understanding that I was to be sent for immediately if she began to have pains or began to bleed again. There was at this time no dilatation of the cervix.

"Two weeks later a messenger summoned me to my patient at mid-day. I found the anterior vaginal wall protruding from the vagina in a mass as large as a baseball. This being reduced, the cervix was found well dilated. The pains were very weak and far apart. The lower margin of the placenta could easily be felt attached low down to the left and partially presenting. The finger could be freely swept around the os in other directions and readily introduced into the uterus. The presenting part was high up, and was found to be the breech. The patient told me that she had been losing blood continually since she last saw me, and her appearance

testified to the truthfulness of her statement. She had, however, been losing very little blood that day, and was feeling better. I was forced to leave her for a short while, expecting to return in half an hour, rupture the membranes, and deliver rapidly. I was detained almost an hour, and on my return I found the labor over, with the child and placenta between the patient's thighs. All bleeding had ceased, and the uterus was well contracted. On inquiry I found that about half an hour after I had gone she 'suddenly felt something turn inside her,' and this feeling was followed by several very strong pains, which ended the labor. The woman in attendance informed me that the head was delivered first, and the placenta followed immediately after the breech, together with a free gush of blood. It was an eight-months' child, small and emaciated. The baby died the second day, but the mother did well and slowly regained her lost strength.

"The possibility of a mistake in the diagnosis of the presentation in this case has often occurred to me; but as I had made my examination most thoroughly and carefully, and as the patient was such an excellent subject for examination, the probability of such a mistake is very slight, and I have finally dismissed it altogether. I think that cases of marginal placenta prævia are often safely ended without any interference on the part of the attending physician. I know of a number of such among my friends. The proper treatment is, however, to deliver the child as quickly as possible, and run no unnecessary risks from hemorrhage."

CICATRICIAL ADHESIONS FOLLOWING A BURN.

Dr. W. P. Copeland, of Eufaula, Ala., reports the following case: "The patient was a negro, about twenty years of age. When a boy, he was burned from the left shoulder down the back, left arm, and side. He was not attended by a physician at the time, and from ignorance his parents allowed the arm to adhere to the side, to which it was firmly bound down from the elbow to the axilla in a continuous cicatricial band on both anterior and posterior aspects of arm. He was presented for operation eleven years after receiving the burn. The patient was chloroformed, and the arm was dissected from the side, leaving a broad uncovered surface on the inner aspect of arm and down left side. It was with the greatest difficulty that the arm could be moved away from the side, owing to its long confinement in one position. After stitching the skin together, a layer of dry navy-lint was applied. The wound on the arm healed readily, but the one on side, owing to the contractility of the cicatricial tissue, did not heal by first intention. The dressings were left off, and a loose garment was worn, with a towel around the waist to catch and absorb the secretions, which were soaked up once or twice a day with dry absorbent cotton. Neither water nor any medicated washes were used. The wound healed rapidly and well, and the man now has full and complete use of his arm."

A CASE OF PHTHISIS PULMONALIS TREATED BY BERGEON'S METHOD.

Dr. A. R. Jenkins, of Henderson, Ky., reports the following: "About three weeks since, in consultation on a case of confirmed phthisis, it was suggested to make trial of Bergeon's treatment. The patient, a fourteen-year old girl, was in the last stages of the malady—cough, indigestion, with continuous gastric and intestinal colic, were the most distressing symptoms. The injections were given twice daily for the first few days, without at first any improvement being manifest. Then the quantity of sulphuretted water and gas was increased considerably, after which the patient took food less fearfully, and there was an apparent improvement."

Progress of Medical Science.

On Chronic Poisoning by Tobacco.—At a recent meeting of the Royal Imperial Society of Physicians of Vienna, Favarger made a communication on the above old, but ever new subject, of which the subjoined is a *résumé*. The symptoms of chronic nicotism do not generally manifest themselves till after the usage of strong tobacco for ten years or more, and ordinarily follow the free smoking of Havana cigars. As for the manner of smoking, there are four types of smokers: (1) Those who swallow the smoke; in these cases the nicotine acts, probably, directly on the stomach; (2) those who only breathe in and breathe out the smoke: here the detrimental action remains limited to the pharynx and the larynx; (3) some smokers keep their cigar constantly between their lips, and are in the habit of swallowing a certain quantity of nicotine mingled with their saliva; (4) there are other smokers who use cigar-holders that are soon fouled with nicotine, and are never properly cleaned. Chronic poisoning by nicotine manifests itself generally by disturbances of the circulation and digestion. One of the most frequent symptoms is palpitation, then next in the order of frequency is cardiac asthma, and still more rarely occur attacks of angina pectoris. Physical examination of the heart gives sometimes negative results, and sometimes reveals the existence of chronic myocarditis, or of fatty degeneration of the heart. Among the digestive derangements are noted: loss of appetite, pain in the epigastric region, diarrhœa, or constipation. Among the symptoms pointing to disorder of the nervous system are insomnia and attacks of syncope. Favarger reported a remarkable case of fatty degeneration of the heart in a man, aged sixty, who had been for many years an inveterate smoker of strong Havanas. Several weeks before his death he was attacked, after a meal, with violent palpitation, and a paroxysm of dyspnœa came on the next day. Till the time of his death the temperature remained low (94°–97° F.), the pulse very frequent and small (140 to 160), and the pupils much contracted. At the autopsy were found pleuritic exudations, dilatation, with fatty degeneration of the heart, and an ulcer of the stomach, which had determined a mortal hemorrhage. In this case, said the reporter, the fatty degeneration of the heart could not be attributed to alcoholism, or any other known cause, except that which was the most obvious, namely, the excessive use of tobacco. This view was confirmed by the abnormal frequency of the pulse, by the great fall in the bodily temperature, and by the contraction of the pupils. Although no arterial atheroma was noted, there existed, nevertheless, in this case a functional stenosis (?) of the coronary arteries, equally attributable to nicotine, and to this constriction of the nutrient arteries of the heart, causing ischæmia, was due, presumably, the fatty degeneration of that organ. As for the ulcer of the stomach, it may have been directly engendered by the topical action of saliva impregnated with nicotine, or it may have been the result of circulatory disturbances, according to the process indicated by Rokitansky and Virchow. As for the treatment of chronic nicotism, Favarger recommends as prophylactic means: (1) Never to smoke when the stomach is empty, but always after a meal. In this way the number of cigars smoked will be limited, the nicotine will be made to act on a full stomach, loss of appetite will be prevented, and the antidotal ("anti-nicotine") action of the tannin contained in the wine, tea, or coffee of the meal will be obtained. Tannin, according to Favarger, is the best antidote to nicotine. (2) Smokers should avoid holding their cigars long in their mouths. (3) Cigar-holders should be frequently renewed, and regularly cleaned. Smokers should smoke the milder cigars occasionally, instead of always choosing the strongest. According to Erlenmeyer (Stillé, "Therapeutics," vol. II., p. 320) smokin-

cigars is vastly more injurious than smoking a pipe, because the preparation of tobacco for the latter purpose destroys as much as two-thirds of its nicotia, while the former loses but little of its active principle in the manufacture. More than twenty-five years ago, Dr. B. W. Richardson presented the following conclusions as the result of an exhaustive study of the effects of tobacco-smoking: (1) The effects produced are very transitory. (2) The evils of smoking are functional in their character, and statements that it causes insanity, epilepsy, chorea, apoplexy, organic disease of the heart, cancer, and consumption are devoid of fact. (3) The habit of smoking is deleterious to the young. (4) Tobacco is a luxury, but probably the least hurtful of the luxuries. Stillé, in commenting on these propositions, remarks that there are several diseases not enumerated by Dr. Richardson which excessive smoking unquestionably develops. One of these is amaurosis, many cases of which have been traced to tobacco-smoking by no less competent authorities than Mackenzie and Sichel. "The former, many years ago, hinted his suspicion that it is a frequent cause of amaurosis, and the latter is now of opinion that there are few persons who have smoked during a long period more than five drachms of tobacco per diem, without having their vision, and frequently their memory impaired." Farnsworth, in the *American Medical Times* (October, 1862), cites a case of impaired vision from the same cause, with general anæsthesia. "In spite of a well-directed treatment the disease grew worse, until the discovery was made that the patient was in the habit of smoking a pipe almost continually, with the coarsest kind of tobacco. On relinquishing this practice he gradually recovered."—*The Boston Medical and Surgical Journal.*

THE DISTRIBUTION OF PHTHISIS.—The third volume of Hirsch's great work, "A Handbook of Geographical and Historical Pathology," recently issued by the New Sydenham Society, contains, among much valuable information, some striking, and to many, no doubt, novel facts regarding the incidence of pulmonary phthisis. It is, as Professor Hirsch remarks, emphatically a disease of all times, all countries, and all races. No climate, no latitude, no occupation, no combination of favoring circumstances forms an infallible safeguard against the onset of tuberculosis, however such conditions may mitigate its ravages or retard its progress. Like typhoid fever, phthisis dogs the steps of man, wherever he may be found, and claims its victims among every age, class, and race. A summary of results shows that the average number of deaths from phthisis is about 3 per 1,000, or nearly one-seventh of the total mortality. The first fact which comes out clearly from Professor Hirsch's tabulated data is the relatively large mortality from phthisis in the large centres of population. Thus Vienna has a death-rate from this cause of 7.7 per 1,000, or more than twice the general average. Pesth is credited with 6.9 per 1,000, Brussels with 5.6, Stockholm with 4.1, Munich and Glasgow with 4, Berlin and Dresden with 3.8. In the smaller towns the rate sinks to 3 or 2.5 per 1,000, and in rural districts the mortality is still less. Many facts are at hand to show that an increased liability to phthisis goes, *pari passu*, with rapid growth of population, and especially with the massing together of large bodies of workers engaged in arts and manufactures. Impure air and hygiene are undoubtedly the most potent factors in the genesis of the disease, and take precedence even of hereditary predisposition and imperfect nutrition. Among nomad tribes, such as the Kirghiz of the Central Asian steppes, or the Bedouins of Arabia, the disease is practically unknown; but there is much instruction and warning for us in the fact that when, as sometimes happens, these wandering tribes settle in the towns their immunity immediately ceases. The influence of geographical position upon phthisis turns out to be much less than current opinion would indicate. We are prone to regard it as essentially a malady of temperate latitudes, and of the Anglo-Saxon race, but more accurate statistical information proves that it is very virulent in many warm countries, and that some of the inferior races, such as the negroes, the inhabitants of the West India Islands, and the peoples of the South Sea suffer more in proportion than the nations of Europe. It will be a great surprise to many people to learn that the death-rate from phthisis is as high in sunny Italy as in foggy England. Those who hold the old-fashioned notion that damp and cold are the main causes of phthisis will be puzzled to account for the almost complete immunity enjoyed by the inhabitants of the Hebrides and the Faroe Islands. Latitude is not, however, without a distinct influence, but upon the prevalence and the type of phthisis. The disease becomes rarer as we approach the poles, and is extremely infrequent within the limits of the Arctic and Antarctic Circles. In the Tropics the disease does not conform to the ordinary chronic form familiar to medical observers in this country, but in the brevity and severity of its course approximates rather to acute tuberculosis. While the influence of latitude is comparatively slight, irregular, and apt to be counteracted by other conditions, that of altitude is most potent. Among the higher Alps, the Andes, the elevated plateaux of Mexico, Persia, and South Africa, we approximate, though probably never quite attain to, conditions of absolute immunity. In India the disease is tolerably common, and very pernicious on the lowlands, while it is extremely rare upon the upper slopes of the Himalayas, the Ghauts, and the Neilgherries. At Bogota and Quito, in spite of the aggregation of large populations, the disease is excessively rare, and is practically limited to settlers from the lowlands or from other countries. Even at Potosi, among a population engaged in mining, and amid conditions of very imperfect hygiene, phthisis can scarcely gain a footing. It is thus evident that the protective influence of high altitude suffices to counteract other forces which usually occasion a widespread prevalence of the disease. The extremely low mortality from phthisis in Switzerland, namely, 1.86 per 1,000, is explained by the fact that so large a proportion of the people reside at a considerable altitude above the sea-level, although the sparseness of the population, no doubt, also operates in the same direction. The influence of a damp soil in promoting phthisis is now well established, and suggests obvious practical conclusions. The incidence of phthisis in the Australasian colonies is of much interest, in view of their popularity as refuges for the consumptive. The large towns of Australia have now a death-rate from phthisis of over 2 per 1,000, and present little advantage to the phthisical sufferer over his own country. On the other hand, the large inland plains of Australia are almost exempt from phthisis, and constitute a genuine sanatorium. In New Zealand phthisis has made frightful ravages among the Maoris, and is the chief factor in their approaching extinction; but the explanation of this fact is not to be sought in any adverse climatic influence, but rather in the miserable dwellings and wretched food of the native inhabitants of these islands. Professor Hirsch's conclusions may be thus briefly summed up: Phthisis is everywhere prevalent, but it is rare in polar regions, and rarer still at high altitudes. The main factor in its production is overcrowding and bad hygiene. Heat and cold, *per se*, have no influence. Damp, when conjoined with frequent oscillations of temperature, predisposes to the disease; but humidity of the air is less important than dampness of soil. Occupation is extremely important, but mainly indirectly, as tending to good or bad hygienic conditions.—*The British Medical Journal.*

PROFESSOR VIRCHOW'S address on myxœdema has called attention to this disease in Germany, and now another case is reported by Dr. L. Landau in the *Berlin. Klin. Woch.*, No. 2. This makes the fifth reported from Germany; Reiss, Erb, and Senator having reported the previous four in the same periodical (1886, No. 5; 1887, No. 1; 1887 No. 9).

THE MEDICAL RECORD:

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GEORGE F. SHRADY, A.M., M.D., EDITOR.

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A NEW METHOD OF PREVENTING HEMORRHAGE AND TREATING ANEURISMS.

UNDER the above head Dr. C. S. Muscroft, of Cincinnati, describes his experience in the use of acupuncture previous to amputations as a substitute for digital compression, the tourniquet, and Esmarch bandage. He was led to an enthusiastic belief in the wide-reaching importance of this method by a successful application of it in a case of amputation at the hip-joint and in one of amputation at the shoulder. In the former case the method of employing the compression is described as follows:

As soon as the patient was fully under the influence of the anæsthetic, a needle, one-eighth of an inch wide, slightly bent at the point, about the thickness of a dime, and four inches long, was introduced perpendicularly into the front of the thigh, about an inch and a half below Poupart's ligament. The exact point of entrance was one-fourth of an inch internal to the combined sheaths of the vein, artery, and nerve. The point was pushed beyond the vessels, then turned outward until the needle had passed beyond them; the point was then pushed out through the integument. The needle was then behind the vessels and nerve. A piece of cord was passed under the heel and point of the needle, forming a figure-of-eight ligature. Before the ligature was applied the femoral artery could be felt pulsating strongly, but when it was tightened the pulsation below the needle had ceased entirely.

After the incisions had been made the femoral artery was found to be perfectly compressed.

Dr. Muscroft also claims that this method will be found useful in the treatment of aneurism in any part of the lower or upper extremities. He has found that the steel pin can be retained, without causing irritation, for four days. Then, if necessary, it can be removed and another introduced lower down.

While admitting that acupressure was an old surgical procedure, Dr. Muscroft claims that its application in the prophylaxis of hemorrhage, and in the surgical treatment of aneurisms, is new. The points made were summarized as follows:

1. The simplicity and easy applicability of the method.

2. There is no interference with the general venous circulation in nearly all cases.

3. The plan is so simple that it does away with all of the more complicated forms of compression of vessels by tourniquets, bandages, or tubing.

4. It is also a process for shutting off the arterial flow in cases of aneurisms.

5. The introduction of the pin or needle will, in most cases, be an entirely bloodless operation, and attended with very little pain. The pin used may be straight, bent at the point, or of any curve or shape to suit the operator.

6. It is also a ready, safe method of arresting hemorrhage in recent accidents from compound fractures or other causes.

7. Many cases will fall under the observation of the practising surgeon in which its utility will suggest itself.

8. The kind of metal of which the pin or needle is made is a matter of the utmost importance, experience teaching that steel or iron produces less irritation than the more costly metals, such as gold or silver.

9. Freedom from septicæmia.

10. The great facility with which the operator could obtain a pin suitable for the compression. For one of the larger vessels it could be obtained from a lady's toilet supplies, by using any of the long steel pins with glass heads, especially those used for fastening on their hats. Their being straight in most cases would be an advantage.

11. This manner of preventing bleeding in operations about the hip-joint (exsection), shoulder-joint, or knee, will be of the greatest importance.

12. It does away with the necessity of a most important assistant.

LOW MEDICAL FEES IN THE WEST.

WE have been informed that a late distinguished specialist of Chicago would receive and treat patients for ten dollars a month, that the office-visits to a leading and world-renowned general consultant in the same city are considered by him to be worth one dollar, and that this is the fee charged by a Cincinnati specialist and professor of deservedly great repute. The *Cleveland Medical Gazette* says that in that wealthy city the medical fees are lower than in any other large city of the United States. Some physicians of large practice have fallen into the habit of charging by the week, one or two dollars being the sum asked for services rendered, perhaps daily. Some oculists fit spectacles for one or two dollars, which is less than the optician charges. One practitioner fits a pessary for the same sum, and supplies the instrument himself. An eminent surgeon charged ten dollars for examining a case of tumor of the breast. He apologized for charging so much, and offered to remove the tumor without further expense, and he did so.

A SEVERE REMEDY FOR A MILD AFFECTION.

IN a recent number of the *Gazette des Hôpitaux*, Dr. Bertillon relates how he cured a child of the habit of sucking his thumbs. He placed the boy on a chair, and, forcing him to look intently at a bright object, induced hypnotism. Then he suggested to the child that he ought not to suck his thumbs, repeating the injunction three or four times. On being awakened, the boy complained of a feeling of weight in the head. The next day he refrained from sucking his thumbs, but resumed the habit a few days later. Then he was again hypnotized, and Dr. Bertillon commanded him sternly never to

suck his thumbs again. The habit was not resumed after this, and the cure was pronounced complete.

We have cited this case merely as an illustration of a tendency, which is altogether too prevalent at the present time, to employ heroic remedies carelessly and without warrant, simply because of their novelty, when other and well-tried methods will answer every purpose. Sucking the thumbs is not such a dangerous and intractable disease that it would seem to call for the employment of a remedy like hypnotism, whose effects, immediate and remote, upon the delicate nervous structures of a young child are as yet by no means perfectly understood and appreciated.

An experiment such as the one described, in a case possessing in itself no gravity, seems to be, in the present state of our knowledge at least, one that cannot be justified. Nevertheless, there is one suggestion which it offers that may be worth considering. If it is possible to cure one habit by means of hypnotic suggestion, another, and a worse, one might possibly be broken up in the same way. In a case of masturbation, for instance, the consequences of the habit are of such a nature that almost no remedy which would be efficacious in destroying the habit could be regarded as unjustifiable. Here an heroic remedy is called for, when milder methods fail, and hypnotism offers a plan of treatment which may be well worth considering.

KREMYANSKI'S METHOD OF TREATMENT OF PHTHISIS CONDEMNED.

We referred in a recent issue to the treatment of pulmonary phthisis by inhalation of anilin oil, as recommended by Dr. Kremyanski in a communication made at the Congress of Russian Physicians, held a short time ago in Moscow. Considerable incredulity was expressed at the time by the members of the Congress as to the results obtained, but the author's claims could not be overthrown, as the method had as yet been tried by no one but himself.

It was not long, however, before the new measure was put to the test, with the result, it would seem, of very seriously discrediting Kremyanski's assertions. At a meeting of the Moscow Medical Society (*Russkaya Meditsina*) Dr. Nesteroff reported a case of pulmonary phthisis which had been treated with the ordinary remedies without any very noticeable results. When Kremyanski's paper appeared, it was determined to make a trial of his method. The patient was accordingly put upon inhalations of anilin and oil of winter-green, and died at the expiration of two weeks. Dr. Nesteroff declared himself as perfectly satisfied with this one trial, and said that under no circumstances could he ever be persuaded to repeat the experiment. His conclusions were indorsed by the Society, and a resolution was passed to the effect that the method was not only useless but was actually dangerous to the patient, and therefore unjustifiable.

This was certainly something of a set-back for Kremyanski, but we need not be too ready to accept the verdict of the Moscow Medical Society as final. Russian physicians are no better than their brethren in other lands, and are, unfortunately, not always superior to the petty jealousies which sometimes actuate the rest of mankind. Dr. Kremyanski is from Kharkoff, and possibly may not be welcomed as an instructor by the residents of the metropolis. The author claimed to have treated two patients, with well-marked pulmonary tuberculosis, by his anilin inhalations, and both patients were apparently cured. If these statements were correct, and there seems to be no reason to doubt the honesty of the author of them, it is hardly fair to condemn the method in such strong terms because of a single failure, which may not have been justly chargeable to the treatment adopted. Any method which offers even a faint hope of cure of so fatal a disease ought certainly to be given a fair trial.

BORAX IN ENLARGEMENT OF THE SPLEEN.

In a communication made to the *Indian Medical Gazette* for January, 1887, Dr. V. Richards recommends very highly the use of borax in cases of enlargement of the spleen. It was first suggested to him, he says, by a native, and he has employed it many times with great success, some of the most severe cases showing rapid improvement and ending in a complete cure. He uses the borax in addition to the iron treatment, his plan being to give to an adult from thirty to forty grains, in a lump, which is allowed to dissolve in the mouth. One dose of this size is given early in the morning, and again in the evening.

Whatever the curative value of this method may be in other hands, it certainly possesses the merit of simplicity, and can do no harm except, possibly, to the reputation of the medical attendant, during a short trial. The spleen would seem, however, to be a very accommodating organ if it will contract its dimensions at the solicitation of so mild a remedy as borax. Nevertheless the method may be worth a trial.

THE PULSE.

We have read with profound interest the Croonian Lectures on "The Pulse," by Dr. Broadbent, and have pondered with admiration over the learned comments thereon by our erudite contemporary *The Lancet*. "One has only," says this estimable journal, "to turn to the writings of Hippocrates to learn how closely and how accurately its (the pulse's) variations were observed, with much remarkable result in prognosis and treatment." Alas for the uncertainties of historical reminiscence! Hippocrates was a great physician, and it is generally thought safe to credit him with first knowing, in a crude way, of course, a little of every part of our great art. But Hippocrates, in fact knew nothing of the pulse, wrote nothing about it, and quite neglected that time-honored source of professional information. Herophilus was one of the first to investigate it, while Galen erected its study into a separate science, and fixed irrevocably upon the profession the practice of fingering the wrist as part of every medical service.

A critical examination of Dr. Broadbent's lectures on the pulse will lead one to think that its study does not at the present day give us information commensurate with the religious exactitude of the examinations made of it. In acute disease the erudite finger learns something, indeed, at times, very much, as to the strength of the heart

and the activity of febrile or inflammatory processes, but the careful physician learns still more by direct examination of the chest. The stethoscope has supplanted the *tactus eruditus* in great measure; and he would be a narrow physician indeed who drew from a condition of the pulse alone such definite inferences as to the patient's disorder as ancient authorities laid down. The knowledge which a study of the pulse gives as to the condition of the arterial walls, and as to the presence of high or low tension, is often of extreme value. There is nothing which the student should be trained with more care to observe than these conditions of the pulse. Yet even here the information is not absolute. High and low tension are relative terms, having their importance only when studied in connection with age, sex, temperament, and such pathological conditions as may be found.

Dr. Broadbent declares that he has been unable to associate any condition of pulse, as regards low or high tension, with any special vigor of body or mind or any peculiarities of temperament. Persons with a pulse of low tension may perhaps, he tells us, be longer lived; they may not wear out so rapidly; but, if better able to endure the stress of life, they are less capable of withstanding the onset of acute disease.

Dr. Broadbent denies any practical utility to the sphygmograph in diagnosis or prognosis. In this he certainly goes too far, and perhaps if he had studied his cases of high and low tension with its aid, he might have reached more definite conclusions. It is an instrument which supplements the finger, especially in this matter of high and low tension. To those who have not yet the sensitive touch that comes from long training, it may be of especial help if intelligently used.

TRANSFERRAL OF THE DYING.

For some time complaints have been made regarding the transferral of dying persons from the various hospitals of the city to Bellevue. An investigation of the facts regarding this matter shows that some reform is urgently needed, both in the interests of humanity and of good hospital management. In the past six months there were brought to Bellevue Hospital from other hospitals of this city seventy-nine persons who died within the intervals of from five minutes to four days after their admission. During the previous six months the number of cases was probably larger, so that it is safe to say that nearly two hundred dying persons were transferred by ambulances during the past year and left to swell the death-rate of our city hospital. One patient from St. Vincent's died within five minutes after admission, another from the same hospital in fifteen minutes, two within seven hours. One patient from the Presbyterian Hospital died within two hours, two within twelve hours. One patient from Chambers Street Hospital died within thirty minutes, and one each within two, six, seven, thirteen, fourteen, eighteen, nineteen, and twenty-two hours. One patient from Gouverneur Hospital died in ten minutes, and another within twelve hours after admission. A total of seventeen persons died within a dozen hours after admission, while the average time before death occurred in the seventy-nine cases was thirty-six hours.

The institutions sending these cases were: Chambers Street Hospital, twenty-nine cases; St. Vincent's, sixteen; Presbyterian, six; New York, one; Roosevelt, four; Manhattan, two; Gouverneur, thirteen; Ninety-ninth Street, eight.

The largest number of cases came from Chambers Street Hospital. This is the reception branch of the New York Hospital, and it would seem more proper for it to transfer its cases to its own hospital, which is considerably nearer, instead of taking them to Bellevue and obliging that institution to have the credit of the mortality.

The cases brought from Chambers Street lived, on an average, 1.1 day; those from St. Vincent's, 1.7 day. The Presbyterian Hospital has the most unfavorable record for its transfers of .78, or about eighteen hours. These averages, of course, refer only to the moribund. A considerable number of cases come from the city's reception hospitals, and we presume that some transfers may really be cases brought directly from the streets.

It would be unfair to charge these institutions which thus send off their dying with intentional inhumanity or a specific desire to keep their own mortality-rate as low as possible by such means. But hospital-managers should avoid the appearance of evil intention, and still more, a very manifestly inhumane practice. Indeed, some instances might be cited which appear to be illustrations of actual brutality.

The leisurely labors of Charon, as he ferried the souls of the dead across the Styx, are nothing compared with the occasional scurrying of ambulances, from all parts of the city, bearing the *morituri* to Bellevue.

News of the Week.

The China Medical Missionary Journal is the title of a new journal published at Shanghai, and edited by Drs. J. G. Kerr, J. K. Mackenzie, and E. Reifsnyder. It is, we are told, the first medical missionary journal published in heathen lands.

Medicine and Surgery at the Paris Salon.—The sensation at the Salon is a large canvas by Brouillet, representing Professor Charcot giving a lesson at the Salpêtrière to his pupils. The professor is standing at a table facing the audience. His assistant is at hand holding in his arms a woman in a hysterical attack. Another painting of a similar character, by Gervex, represents Dr. Péan giving a lesson in surgery. A female patient, under chloroform, lies on the table before him, an assistant surgeon kneels beside her counting the pulse, while a sister of charity waits for the operation to begin.

The Double-headed Boy.—At the recent meeting of the Medical Association of Georgia, Dr. W. F. Westmoreland presented a case, the account of which, as given in the *Atlanta Medical and Surgical Journal*, is as follows: "The boy had, at the lower extremity of the spinal column, what seemed to be an extra head. The outlines of the nose, mouth, and eyes were well marked. The growth was covered, except what seemed to be the face, with long curls, not unlike the hair on the head. The boy was eleven years old. He had been exhibited in all parts of the United States as the double-headed

boy, and up to within a few months before he was brought to this city had enjoyed good health. About six or eight weeks before he was brought here the extra head began to give him pain, and very soon began to suppurate. In a few weeks the boy showed well-marked symptoms of septicæmia, and when presented to Dr. Westmoreland he advised the removal of the mass. The parents objected at first, saying that they had consulted the best surgeons in the country and they had advised against any operation, deciding that it would surely produce death whenever the mass was removed. They reluctantly gave their consent, however, and the operation was performed. Dr. Westmoreland stated that the coccyx and a portion of the sacrum were involved in the tumor, or head, and had to be removed. Dissection revealed very well-marked cranial bones in the mass, with a membrane similar to the dura mater, but there was no brain-substance in the sac. He presented the boy and the tumor. The boy had entirely recovered from the operation." We regret that the history was not reported in detail, as it is highly probable that a truly rudimentary skull was present.

The Recently Organized American Orthopædic Association holds its first annual meeting on the third Wednesday in June.

The Florida Medical and Surgical Journal has retired from independent existence, and incorporated itself with the *New Orleans Medical and Surgical Journal.*

Canadian Doctors take kindly to politics. About one-eighth of the Provincial Legislature consists of physicians.

The Medical Department of the University of Pennsylvania held its Annual Commencement on May 2d, and graduated a class of ninety-nine.

The Cow-house Treatment of Consumption, devised by Dr. Saiffert of Paris, and introduced into England by Dr. Beddoes in 1799, is said by Dr. Pick (*Medical News*) to represent the idea now carried out by gaseous enemata.

The Government Yellow-Fever Commission.—We learn with pleasure that the President has appointed Dr. Geo. M. Sternberg to investigate the merits of inoculation for the prevention of yellow fever.

Early Paternity.—A correspondent of the *British Medical Journal* reports a well-authenticated case in which a boy thirteen years and four months old successfully impregnated a woman. The *Journal* states that the earliest case heretofore recorded of precocious puberty is that of a boy aged fourteen.

Dr. Daniel G. Brinton, who has been for so many years the successful editor of the *Medical and Surgical Reporter*, has severed his connection with that journal. We are pleased to learn that Dr. Brinton will not retire from the field of journalism which he has so conspicuously ornamented, but will connect himself with some other journal in the early autumn.

Professor Kocher, of Berne, will be pleased to see the announcement in a contemporary that Professor Kocher, of Berne, will attend the next International Congress.

The Coming Meeting of the American Medical Association at Chicago will not, we trust, be "hippodromed" in the extraordinary and undignified way which characterized its session a year ago. It is not a question of codes, or climate or locality, but of the self-respect, the dignity and conservatism which ought to characterize a great representative body of physicians.

The Society of the Alumni of Bellevue Hospital is composed, as we learn from a member authorized to speak, of men who have served in Bellevue Hospital as junior and senior assistant and house-physician, and who hold a diploma given them by the Commissioners of Charities and Correction and signed by the entire medical board of the institution. It has no connection whatever with Bellevue Medical College.

Landoi's Rule for Estimating the Amount of Solid Matter in the Urine.—Multiply the last two figures of the specific gravity of the urine by the number of ounces of urine discharged in twenty-four hours, and the result will express in grains the quantity of solid matter discharged. Its practical value is apparent in view of the theory that peurperal convulsions are due "not to the diminution in quantity of urea only which is excreted, but to the diminution in the amount of all the solid constituents which are in solution in the urine."

Railway Mortality.—The returns of accidents and casualties reported to the Board of Trade by the several railway companies in the United Kingdom during the year 1886 show the total number of persons killed and injured in the course of public traffic during 1886, to have been 938 killed and 3,539 injured.

Obituary.

E. DARWIN HUDSON, JR., M.D.,

NEW YORK.

The death of Professor E. Darwin Hudson, Jr., of this city, which occurred on May 10th, was most sudden and unexpected. It is not only a sad blow to his family and numerous friends, but it is a serious loss to the profession of this city and, we may add, of the whole country. Dr. Hudson was one of our most active workers, and few are aware of the amount accomplished by him in promoting the success of the societies and school with which he was connected. After a good many years of untiring industry, he had begun to reap in full the well-deserved rewards of reputation and remunerative practice. And it is a sad and bitter reflection that just at this moment, when life held out its brightest promise, he should be suddenly taken away. Dr. Hudson was a man of sound and extensive knowledge, of ripe experience, and excellent judgment. He was affable and kindly in manner, and reached his position in the profession making only friends of his competitors and rivals. Yet he was a man of decided force of character, as his career abundantly showed. His contributions to medicine were not very numerous, but what he did was always well done, and his written contributions always attracted attention and drew forth discussion. His little work on "Physical Diagnosis" is a model of clearness and compactness. Dr. Hudson was identified with the prosperity of the Polyclinic and of the Academy of Medicine. In his earlier years he was Professor of Medicine in the Woman's Medical College of this city. Dr. Hudson was born at Northampton, N. Y., in 1843.

Reports of Societies.

THE SIXTH GERMAN CONGRESS FOR INTERNAL MEDICINE.

Held at Wiesbaden, April 13, 14, 15, and 16, 1887.

PROFESSOR KORTE, OF BERLIN, IN THE CHAIR.

[Special to THE MEDICAL RECORD.]

(Continued from page 529.)

THURSDAY, APRIL 14TH—SECOND DAY—MORNING SESSION.

After the transaction of some routine business PROFESSOR NOTHNAGEL, of Vienna, presented a paper on the subject of the morning session, viz.,

THE LOCALIZATION OF BRAIN DISEASES.

The speaker opened with a reference to the great and wide-spread interest taken in this subject. We have chiefly to thank Fritsch, Hitzig, Munck, Meynert, and Flechsig for their labors in this direction. This question belongs to the most complicated and difficult in all pathology. The subject was discussed in a most scientific and careful manner.

PROFESSOR NAUNYN, of Königsberg, read a second paper on the same subject, which agreed in substance with the previous communication.

DR. H. CURSCHMANN, of Hamburg, opened the discussion with some practical points from his own experience.

PROFESSOR HITZIG, of Halle, thought that from the nature of the subject it was only possible in a small way to come to a complete understanding of it. Since Broca's observation that disturbance of speech occurred almost without exception after right-sided paralysis, that is, left-sided brain disease, the fundamental question is, in general, on the ground of pathological observations, Can a localization of the cortex cerebri be made? This question, as far as the human brain is concerned, may be answered in the affirmative. Both essayists pointed out the best method of solving the problem which the clinical material could impart. Now, if a disturbance of function is always found with a lesion of a certain place, and never without this lesion, and if this lesion never occurs without the disturbance, then the conclusion is plain. This circumscribed spot must be the seat of the function in question. The speaker concluded with the following statements:

1. The disturbances of vision, which till now have been observed in connection with disease of the cortex are the following: (*a*) Hemiopia; (*b*) complete blindness; (*c*) psychological blindness; (*d*) disturbance of the sense of color; (*e*) subjective perception of light and of faces. (*a*) treats of blindness mostly of the lateral fields of vision; light-impressions are not felt in general. Under (*b*) the blindness, which is constituted only by double-sided foci, is described as double-sided hemiopia. The psychological blindness is not confined to those suffering from mental disease with general paralysis. In these cases the patient sees, but may not appreciate the retinal impression. The optical pictures are lost to him; he no longer combines ideas with them. Upon the ground of clinical and anatomical experience, it can be said with freedom: The appearance of continued cortical hemiopia is dependent upon the lesion of the cortex of the left lobe and of the left occipital depression. If the lesion occurs on both sides, then complete blindness occurs. For mental blindness we should seek an anatomical groundwork in the occipital lobes.

2. Motor cortex paralysis, for example, of the extremities, is the result of lesions of the gyri centrales and of the lobulus para-centralis.

3. The paralysis of the so-called muscular sense comes from lesions of the temporal lobes.

PROFESSOR NAUNYN directed attention to the localization of the aphasic disturbances in the cerebrum. By aphasia one understands those disturbances of speech which do not simply depend upon the general weakness of the mind nor upon paralysis and weakness of the vocal apparatus. The speaker described three great groups of aphasia: (*a*) Motor; (*b*) sensory, with word-deafness; (*c*) uncertain. In the motor group the patients are unable to form the words, but this is not in consequence of paralysis of the muscles of speech. The second group includes those cases in which an evident difficulty of understanding words, or "word-deafness," is present. The third group embraces the whole number of those very different cases in which we find as characteristics either the difficulty of forming words or the inability to understand words. The motor aphasia is located in the region of the convolution of Baroca, the sensory aphasia in the region of the temporal lobe of the cerebrum. These aphasias also depend upon the lesions of the cortex just mentioned. The cases of the third group, which generally appear to be more developed forms of the first two, depend upon a lesion localized quite near to those of the latter.

PROFESSOR ADAMKIEWICZ, of Cracow, read on the subject

THE CURE OF NEURALGIA BY MEANS OF CATAPHORESIS.

The reader had already, in a former article, expressed the opinion that by means of an instrument devised by himself and called "diffusion-electrode," chloroform could be forced through the skin until the patient was thrown into the deepest cataphoresis. He then reported the results obtained by this procedure in the treatment of neuralgia. The diffusion-electrode should be connected with the positive pole of a constant battery, and placed upon the painful part before the current was closed. Now the current should be closed and gradually increased to seven milliampères. It should be held at this height for two minutes, then slowly brought down to nothing. From this kind of an application the speaker had never seen any evil sequences. He had never observed the formation of eschars, but had found that the cataphoresis cured the neuralgia in all his cases, and that the cure followed more promptly the more recent the case. The nerves having a superficial course he found could be cured much easier when the conditions were favorable. One sitting is enough to completely remove the complaint. In chronic neuralgia the cataphoresis cuts short the duration of the attack, weakens its intensity, and can, for a longer or shorter time, bring it under control. Those neuralgias which depend on a trouble which cannot be reached by the cataphoresis are very unfavorable for its definite action.

PROFESSOR A. FRAENKEL, of Berlin, delivered an address on the subject of

THE ETIOLOGY OF TYPHOID FEVER.

This was discussed for a short period with considerable vigor. The discussion was concerning the infectiousness of the disease.

AFTERNOON SESSION.

PROFESSOR VOGEL, of Munich, read a paper on

THE PATHOLOGY AND TREATMENT OF WHOOPING-COUGH.

This disease is classified by Gerhardt among the infectious diseases, yet the contagion of whooping-cough is of another nature than that of the acute exanthemata. As concerns the pathology, the great clinicians of the last century presented a gastro-pathological theory. In the beginning of the present century the neuro-pathological theory had many followers, but this also fell to the ground as unsuccessful as was the attempt to prove whooping-cough to be a simple bronchial catarrh. There now remains no doubt that it comes under the list of infectious

diseases. In the pneumonia following measles and whooping-cough great numbers of microbes were seen by Thaon in the pus and lung-cells of the exudated matter, and, indeed, in the pneumonia of pertussis he had found diplococci and bacilli in greater numbers than in diphtheritic pneumonia. In the case of a nursing-child whooping-cough is a dangerous and pernicious disease; in older children the course of whooping-cough is favorable throughout. In an epidemic in Wurzburg 52 children under one year were taken ill and 13, or 25 per cent., died; 248 were attacked between one and five years, and 12, or 4.8 per cent., died; between six and fifteen years, 87, of whom 1, or 1.1 per cent., succumbed. The author lamented that the mortality tables followed the age so closely, notwithstanding the plan of treatment followed. The remedies recommended for whooping-cough are of two great classes,

ANTISPASMODICS AND DISINFECTANTS.

In treating the spasmodic cough by narcotics one resigns every chance of shortening the process; opium and all its preparations should not be given for any length of time continuously; however, a small dose of opium or morphia is a great relief to children who have passed sleepless nights. A combination of cannabis indica and belladonna is especially recommended by Vettersen. Of 116 children so treated a favorable result was recorded in 33; of these, 30 were completely cured in from eight to fourteen days. Prior recommended the painting of the oral cavity with a solution of cocaine of a strength of from 10 to 20 per cent.; the application of cocaine is not entirely without danger, however.

THE ANTISEPTIC TREATMENT

strives to shorten the attack by destroying the germs of the disease. The speaker mentioned the different modes of treatment by residence in gas factories, inhalations of carbolic acid, etc. Concerning

PSYCHICAL TREATMENT

nothing new has appeared in recent literature. No followers have been found for the opinion that whooping-cough can only be cured by the rod, fortunately for the poor little patients.

Professor Hagenbach, of Basle, read a second paper on this subject. He gave a large number of statistics; 240,000 children have the whooping-cough every year in Germany; in Basle, 1,000 per year, with 12 deaths. The mortality is on the average four or five per cent. Toplitz reports the mortality from this disease among the children of Jolichnic, in Breslau, in the years 1875 to 1885, as 7.9 per cent. In Basle during the last eleven years the mortality among children under one year has been 26.8 per cent.; from one to two years, 13.8 per cent.; two to five years, 3 per cent.; five to ten years, 1.8 per cent.; ten to fifteen years, 1.8 per cent. These figures show that whooping-cough is a serious disease in the tender years of childhood.

WHAT IS WHOOPING-COUGH?

The recent investigators are about all united that it is an infectious disease. It comes epidemically, seldom sporadically. In large cities it is endemic and contagious. In whooping-cough we have a catarrh of a certain part of the mucous membrane of the respiratory tract, which is dependent upon the lodgment of fungi. At these places, through irritation of the ending of the superior laryngeal nerve, attacks of coughing are excited by reflex action. Professor Hagenbach then discussed the question whether we have to deal with a local or a general infection. The disease is most frequent in the first year of life, and is found with rarity in the first months. The susceptibility is great up to the tenth year; after this age it becomes less. It is contagious in the first and second stages; so long as mucus is produced the disease may be carried. Outside of the human body the contagium seems to be unable to exist for any length of time. The speaker then discussed the question of

PROPHYLAXIS.

Schools for small children should be carefully watched, and children with suspicious coughs kept away as long as they cough in paroxysms. The expectorated material must be carefully removed; if the disease spreads the school should be closed. The moving of children infected with whooping-cough to various places for change of air is often the cause of an epidemic in places free from the disease.

Dr. Michael, of Hamburg, discussed the subject and recommended a method used by him, consisting of inhalations into the child's throat. In more than one hundred cases so treated he had more or less improved seventy-five. In twenty-five cases he had no success at all. The speaker laid more stress upon the qualitative improvement of the cases than on the shortened duration.

Professor Heubner, of Leipsic, considered the character of the disease to be that of a virulent catarrh, and not a blood infection. He agreed with the former speaker in thinking it possible to render these attacks fewer and lighter, and eventually to cause the shortening of the disease and its cure.

Dr. Schliep, of Baden Baden, recommended the treatment by the pneumatic cabinet, which he had used. The increased pressure of air in this cabinet acted mechanically as a sedative on the mucous membrane. He found from twelve to twenty sittings sufficient to cure a child suffering from whooping-cough; as a further remedy he recommended an emulsion of turpentine. He also had had success from burning sulphur in the room.

Dr. Sonnenberger, of Worms, advised the use of antipyrin. He had used it in an epidemic in Worms and vicinity with success, and claimed that it rendered the attacks milder and shortened their duration.

Dr. Cohen spoke of the favorable results from inhalations of bromide of potassium, and also of the use of the musk preparations.

Friday, April 15th—Third Day—Morning Session.

Professor Unverricht, of Jena, presented a communication on

EXPERIMENTAL EPILEPSY.

The lower half of the cortex of the brain contains the centres for the occurrence of epilepsy. Irritation of the cortex will cause attacks of epilepsy. The speaker knew, from experiments he had carried out upon a dog, the importance of the motor region for the muscular spasms.

Professor Rossbach, of Jena, read a paper describing

A BREATHING-CHAIR FOR EMPHYSEMATOUS AND ASTHMATIC PATIENTS.

While till now it has been necessary to use manual treatment of the thorax in order to lighten the severity of asthmatic attacks, a stool had been invented by a patient of the speaker which enabled him to breathe compressed air without manual aid. The patient takes a seat, and buckles about his chest a girth which is made fast to the chair; on both sides of the chair are arms, which the patient moves forward, and which movement tightens the girth four centimetres. By means of this continuous moving of the arms of the chair the patient is enabled to relieve himself. The professor had used such a stool six months in his clinic, and had improved several cases. The advantage this chair has over manual treatment is that through this band the whole thorax is regularly compressed, which is impossible with the hand. Besides, the physician or attendant would not be able to carry out the manual treatment for more than half an hour, while the chair can be used as long as desired. Also this instrument is always at hand, for attacks in the night or any time when manual aid may not be available. The

professor exhibited the chair, and presented the patient who had invented it to the Congress.

Professor Schreibe, of Königsberg, related how he had attained the same results by means of elastic corsets.

Professor Litten, of Berlin, next read a paper on the

CONNECTION BETWEEN DISEASE OF THE STOMACH AND CHANGE OF POSITION OF RIGHT KIDNEY.

The fact that distention of the stomach occurs in connection with dislocation of the kidneys, the so-called wandering kidneys, is not new. The only question is, if this stands in a causative relation to the other. The change of position of the kidneys is dependent on mechanical causes; in women it is often occasioned by too tight lacing. The speaker then related such cases of dislocation as had not yet appeared in the current literature. He had made the observation that the ectasia of the stomach occurs frequently in connection with dislocation of the kidneys in laborers, masons, and others whose mid-day meals often consist of indigestible food and are eaten in a very short time. He only found two women among his patients who were able to take their meals quietly. In 17 out of 28 cases of stomach distention observed by him, dislocation of the kidney was present; this brought him to the belief that the distention of the stomach is the cause of the dislocation of the kidneys. In the other cases the renal arteries are probably too short, so that on this account the kidney could escape. The greater or less mobility of the kidneys depends upon the greater or less tightness of the arteries. In closing, the speaker went into detail concerning his findings in post-mortems of such persons as had distention of the stomach with wandering kidneys.

Professor Nothnagel, of Vienna, opened the discussion. He was acquainted with the frequent coincidence between distention of the stomach and dislocation of the kidney, but disputed, however, the causative connection. He had in a period of three months found sixteen such cases. The stomach-distention in many instances was primary, the dislocation of the kidneys secondary. Most cases of dislocation occur in lean, broken-down, nervous women. The speaker then dealt with the treatment of this disease. He placed lean persons first on the malt cure, then placed a cushion over the kidney to hold it in position, and a waist over the cushion which covers the whole body.

Afternoon Session.

Professor Finkler, of Bonn, read a paper entitled

OBSERVATIONS ON THE MODE OF CONTAGION AND TREATMENT OF TYPHOID FEVER.

Modern investigations concerning the nature of the infective germs show how the infectious diseases reveal themselves. In some there is a direct carrying from a diseased to a healthy person, while others are not generally spread, but are confined to special place. Among the pure contagious diseases are small-pox, scarlet fever, diphtheria, etc.

A pure miasmatic disease is represented by malaria. Between these two we now place a third class, termed contagio-miasmatica, to which we refer cholera and typhus abdominalis. It is partly believed that the latter is not carried directly, but the germ coming from a diseased person attains a certain ripeness in the soil and is then able to generate the disease in another person. The knowledge of the quality of bacteria, and especially of those which would seem to be the generators of typhoid fever, goes to show that this indirect spreading does occur. It appears this is the rule, and direct infection is entirely denied by many. Recent observations prove that the infection is carried by many different kinds of vehicles. An excellent example is the epidemic in Mayence in 1884, which was undoubtedly carried by artificial mineral water (according to Dr. Helwig).

Typhoid fever is not confined to certain parts of the earth; it can be carried into a city like Wiesbaden, otherwise so favored as to health, and disturb this security. From numerous examples, we know that if the nest in which the germs are resting is destroyed the epidemic will be cut off for all time; and from this fact it must be believed that there is a difference between the medium which spreads the disease and the source of infection.

Professor Fleischer, of Erlangen, gave an account of some experiments bearing on the

PATHOLOGY OF THE KIDNEYS.

They consisted of numerous experiments on a dog.

Dr. Kühne, of Wiesbaden, read a paper on the appearance of

SPIROCHÆTA FORMS OF THE COMMA BACILLUS

in the tissue of the intestine in cases of cholera, with demonstrations of different fluorescent preparations. The speaker had examined a great many specimens from the epidemics of Paris and Palermo, when he accidentally came upon this variety. After discussing the comma bacillus *in extenso*, he closed by recommending his method of coloring to find the bacillus in the tissue. He then gave different methods of his own to bring to view the bacilli in the internal organs in typhoid fever, lepra, etc.

Dr. Fraenkel, of Dornheim, read a paper on

THE PERMANENT INHALATION OF FRESH AIR,

a treatise on the prophylaxis and therapy of lung-affections.

Professor von Mering, of Strassburg, followed with a paper on

DIABETES MELLITUS.

Dr. Cahn, of Strassburg, then presented a communication on

THE ACIDS IN CARCINOMATOUS STOMACHS.

This was followed by an earnest discussion, taken part in by Professor Riegel, of Giessen; Professor Fleischer, of Erlangen; Professor von Noorden, of Giessen; Professor von Mering, of Strassburg; and Dr. Stückel, of Cologne.

Saturday, April 16th—Fourth Day—Morning Session.

The Secretary, Dr. Emil Pfeiffer, of Wiesbaden, read the reports of the various committees, saying that the Executive Committee had chosen Wiesbaden as the place of the next meeting. The number of members at the last meeting was 209; 7 died, leaving 202 at the beginning of this Congress; 22 new members had been added, making a total now of 224. The number of those present at the Congress last year was 234; this year, 249.

Professor Liebenstein read a paper on

MUSCULAR EXERCISE OR QUIET FOR HEART DISEASE.

After enforcing the dictum of Professor Hoffmann, "Forbearance and exercise," the author said that the majority of the clinicians and physicians held out firmly against a more active treatment of chronic heart disease through exercise of the heart-muscles, and insisted that, above all things, all acute cases, also those where an over-distention of the heart had occurred, must be handled with care. Quiet does not, however, improve the chances of the patient, while a reasonable nourishment, combined with exercise properly carried out, causes a strengthening of the heart-muscles. In all chronic

cases we should change from quiet and care to the endeavor to strengthen the heart-muscles by exercise. On the ground of his rich experience the speaker felt sure that strong yet quiet movements, with quiet exhalations of air, work toward strengthening and slowing the action of the heart, as has already been made known by Schott, of Rauheim. In cases where there is failure in complete contraction, the distended ventricle is never entirely emptied and the heart-muscles become weary, and in the end incapable of performing their duty. Then by means of quiet but energetic muscular exercise the heart is strengthened, stirred up to effectual contraction, and, at the same time, the diastole grows in consequence of the slowing of the pulse. The increase of the arterial blood-pressure acts on the vagus centre, more of the distended blood is forced out of the heart, and thereby the cause of the dilatation removed. Further, the rapidity of the blood-stream increases in consequence of the increase of the arterial pressure. Then, after a number of strong contractions, this acceleration extends to the capillaries and the veins, and a better distribution of blood takes place throughout the entire vascular system. The improvement in the quality of blood lightens the work of the heart-muscles, and in consequence of the stronger stream in the coronary arteries the weakening remaining products are more promptly removed. For patients in the first stages of fatty heart, or with well-compensated heart-failures, every form of German or Swiss mountain-climbing can be recommended.

The speaker warned his listeners against over-exertion, and said that each performance should be followed by a sufficient period of repose. Those cases of failure, however, in which there is no compensation or in which it has been lost, must first pass through a period of quiet and forbearance, and then, by well-measured work, we may commence to improve the action of the heart. The watchful control of the physician is necessary, and only the most quiet forms of muscular labor are fitting. The Swedish method improved by Schott, brief and under medical control, interspersed with pauses for quiet, is to be recommended. On the ground of his experience of the last few years the speaker advised the Oertel-cure for chlorotics; but, above all things, it must be conducted with the greatest care, and its execution must not be left to the patient himself. The heart should not be allowed to be more rapid in its action than the lungs can follow, for deep, quiet breathing has a lightening influence. He closed with the wish that the therapy of chronic heart disease would be placed on the list of subjects for discussion in the Congress.

Dr. Theodore Schott, of Bad Nauheim, recalled the fact that his brother, now dead, had recommended strong but quietly carried out movements, with regular breathing, as a method of cure in chronic heart disease. The mountain-climbing method of Oertel the speaker could not sanction. It is useful only for a very small number of patients; we cannot say when we may commence with this treatment or how high or far the patient shall be allowed to climb. There is always decided danger connected with this plan of mountain-climbing, and the speaker had seen harm done to patients treated in this manner by Oertel and his disciples. It is better far to first strengthen the heart-muscles by means of baths, gymnastics, etc., so that it can stand the greater labor required for mountain-climbing. In other cases the danger incurred by climbing is too great; the indications are to be determined by the pulse-curve.

Professor Leyden, of Berlin, remarked that the mode of treatment originated by Oertel had given valuable therapeutic material and was also an advance. He advised great care in deciding which cases of heart disease could be improved by the gymnastic exercises, and when they are to be used. In light cases in youth, in which a valvular insufficiency can be compensated, careful gymnastics may be used. The President then recalled the fact that the method of Stokes had met with great objections, and he was of the opinion that in the very difficult question,

WHAT INFLUENCE HAVE MOVEMENTS, GYMNASTICS, AND MOUNTAIN-CLIMBING ON THE HEART?

the deductions are still arbitrary in many points. He closed with the expression of the hope that in one of the congresses not far in the future there would be sufficient material on hand to explain this weighty and difficult subject.

Professor Schultze, of Heidelberg, reported numerous cases of

ACUTE DISEASE OF THE CENTRAL NERVOUS SYSTEM,

in which the general anatomical changes fail and we must decide on a diagnosis of meningitis.

Professor Friederich Mueller, of Berlin, read a paper on the

RESORPTION OF FOOD IN CERTAIN DISEASES.

Professor Leyden then made a few short closing remarks, in which he expressed great satisfaction with the work of the Congress and hope for its future advancement.

NORTHWESTERN MEDICAL AND SURGICAL SOCIETY.

A. R. Robinson, M.D., President, in the Chair.

Stated Meeting, March 16, 1887.

Dr. J. Lewis Smith read the paper of the evening (see p. 542), entitled

A CONTRIBUTION TO THE STUDY OF CEREBRO-SPINAL FEVER.

The paper being open for discussion, Dr. R. C. M. Page said: "I have had but little experience with the disease; but I remember that in February, 1870, I was called to see a patient in a basement in Rivington street, a boy seven years of age. I found his temperature 107°. There was hemiplegia and delirium, with suppression of urine. It was in my earlier years of practice, and I did not exactly know what was the matter. Upon inquiring of the mother, she told me that the child had fallen from a chair at noon and hurt its back. She ascribed the whole difficulty to that, which, of course, I thought was a mistake. I prescribed for the patient, and went back to my office. About midnight I was called again to see the boy, and found him dying. I never knew exactly what was the matter with that patient; but the whole neighborhood was full of scarlet fever, and several of the children in that basement about a week after had scarlet fever, although there was none of it in the house at that time. I remember signing the certificate as of death from scarlet fever, but have since thought it might have been a case of cerebro-spinal fever. It may be interesting to inquire whether there is any connection between these two diseases. I have never had a case of it since."

Dr. J. H. Fruitnight said: "This subject is a very important one, and those gentlemen who have lived through epidemics of this disease will be able to give us much enlightenment in regard to it. I have seen at least eighteen cases here and there—three adults, and one case of pulmonary variety; the others were ordinary cases. I have never had any experience in epidemic cases, but recollect having seen one case, of a young lady, where I was struck by the appearance of the eruptions. They were all over the body, particularly over the abdomen, and about three or four inches in diameter. In the sporadic cases I have never seen any eruption whatever, and it seems to me that there must be a difference between the disease in its sporadic and epidemic forms. In complication with other diseases it again differs from either the sporadic or epidemic form. As such it is rather a local trouble, and the other diseases are *sui generis*. Dr. Smith has properly said that in cases occur-

ring here and there no contagion exists; but in the epidemic form I certainly think there is contagion. In one case, of a child who died within three hours, inquiries were made by the health officials later, and they formed the diagnosis, although no autopsy was made. The temperature in that case ran to 108°. As a rule, the temperature need not be regarded unless it rises above 103°. As regards the frequency of the disease at the various ages, with increasing years the tendency to the disease decreases; it is essentially a disease of infancy and early childhood. Most of my patients were from one to eight years of age.

"The author of the paper gave some statistics relating to the various wards of this city which are a little misleading. For instance, the Nineteenth Ward includes a vast amount of territory; and, again, the great proportion of cases occurring in the Seventh Ward may perhaps prove that where there is overcrowding the disease may result from that cause, for in that ward the population is more dense than on any equal portion of territory on this continent."

Dr. C. A. Leale said: "I can safely say that Dr. Smith has carefully observed more cases of cerebro-spinal meningitis than any other living physician. My first observation of this disease was in 1864, when I was instructed by the Medical Department of the United States Army to investigate the cause of cerebro-spinal meningitis as it commenced to appear in Elmira, N. Y. We had admitted to our ward a boy fourteen years of age, of whom I made a very thorough physical examination without arriving at a diagnosis. I found that he was then suffering from very high fever; his temperature was then up to 107°. He had a rapid pulse, indicative of feeble heart-action. His lungs revealed nothing abnormal. His kidneys were normal, as far as the examination of the urine indicated. There were none of the eruptions of typhoid fever, nor the usual characteristics of the disease locating itself in the intestines. I left the hospital for three or four hours, and on my return was met by a number who said that there was a general stampede there. I found this boy covered with spots as large as pigeon's eggs, and almost black. He had purpura hemorrhagica and was delirious. I did not know what such a change in a few hours could mean, and sent for consultation with the post-surgeon, who was familiar with the diseases of the Chemung Valley, having practised largely in consultation in Pennsylvania and Southern New York. He pronounced it a case of cerebro-spinal meningitis. This boy had very severe symptoms. He had paralysis below the waist. His anus was paralyzed. He passed his fæces involuntarily, and his urine passed from him without any power to retain it. The dark spots continued about two weeks, at the end of which time he died from exhaustion, never for a moment having been restored to consciousness. This was the first case in the hospital, although we had a large number of cases of measles occurring among our recruits coming from the country towns. I went to the place from which this boy was brought, and found in the outskirts of the city a large building, formerly used as a warehouse, and which had been recently converted into barracks. The cracks in the building were so frequent and large that streaks of light here and there could be seen, and there were draughts from all directions. Bunks had been placed in this building one above the other, so that I had to climb up eight or ten to reach the one from which this boy was taken. The theory current at that time as to the cause of rubeola in the army was that it was due to a peculiar fungus found in the straw. Our recruits slept on straw apparently fresh, and everything about the building seemed to be in as good a sanitary condition as possible, with the exception of the risks from exposure. The barracks were in a bleak, exposed place, and the boy undoubtedly was severely chilled in this loft. We had no recurrence of the disease during six months of duty at that station, although besides the inhabitants of the place there were ten thousand of our own troops and ten thousand Southern prisoners. This case arose *de novo*, as if it were of an acute specific origin, and after showing itself in this extremely violent form it ended.

"Another very important observation in regard to the etiology of this disease was made by me in the upper part of this city some years ago; it was in that part where the new streets had been laid out, forming, as it were, bridges across deeply sunken lots. The man in whose family this occurred had built a temporary house on a leased lot, and had his yard at least twenty feet below the level of the street. This man was a carter, who had been prosperous down-town and moved up there to have a larger place for his horses. He had six horses and four children, but one of the children was away from home. His six horses died of convulsions in that place within a period of four weeks. During their convulsions they were very violent and kicked out the sides of the stable. All the children at home died—one from malignant sore throat, probably diphtheritic, and two of what I then styled cerebro-spinal meningitis. All had been exposed to violent currents of air, as it was at a season of the year when severe impressions upon the nervous centres would be made by the sudden changes of temperature.

"Another instance occurred in a wealthy family living near Fifth Avenue on Fifty-first Street. The eldest son, about eight years of age, a precocious child, came home one cold morning with his nurse and complained of being so cold at the back of his head and neck that it was a long time before he could be made comfortable. This child had all the symptoms of cerebro-spinal meningitis. He lingered about sixteen or eighteen days and died from exhaustion.

"The case mentioned by Dr. Fruitnight was that of a school-teacher who passed through a severe form of the disease. She had very black spots, became blind and deaf, and about two weeks after the disease began she had gone through all the usual symptoms—high fever, dry tongue, cyanosis, etc. At the end of about three weeks her sight and hearing returned, but she always complained of an intense headache. On returning to her duties as teacher, she could not bear the ordinary noise made by the school-children. She found herself unequal to the position, but as it was her means of support I encouraged her to keep on; she did so until one day, when dismissing her school at twelve o'clock, she threw up her arms, gave a sudden shriek, and before anyone could reach her she was dead. An autopsy was made: As to the brain, a large amount of old exudation was found upon the arachnoid membrane; at the circle of Willis there was a rupture of a degenerated artery, and the sudden death was due to apoplexy.

"I wish Dr. Smith had presented more information in regard to the pathogenesis of the disease; whether he considers it a disease *per se*, or whether the result of some other disease. Is it due to the suppressed eruptions of rubeola, scarlatina, or even syphilis? The author calls attention to a foreign belief in the microbic theory of its origin. I think we find a great many micro-organisms in all diseases attended by high temperature, and in which disorganization of blood-corpuscles allows some atmospheric micro-organism to locate itself in the blood."

Dr. W. M. McLaury said: "During the time of my connection with the Northwestern Dispensary I saw a good many cases of cerebro-spinal fever. Among colored people the disease was always fatal, while among white patients recovery was always slow.

"In this city the disease is much more prevalent among children from four to fourteen years of age than among adults. In connection with this I was surprised to learn from the statistics cited in the paper that so few cases of cerebro-spinal meningitis have been reported from the Southern States. This is probably owing to imperfections

in the statistics from those States; whereas the disease is presumably as prevalent among these as among the Northern and Western States.

"During a part of the time of my connection with the Northwestern Dispensary there was an epidemic of what was then known as relapsing fever, and some of those cases were diagnosed as cases of cerebro-spinal fever; but whether so or not they were very tedious in their recovery."

DR. S. H. DESSAU said: "The point referred to in the paper regarding the alliance of cerebro-spinal fever with other diseases, such as pneumonia, is a very important one. It reminds me of cases of typhoid fever which presented considerable difficulties in diagnosis in their early stages. I have never met a case of cerebro-spinal meningitis as a primary disease, but these cases so closely resembled what I considered at the time was cerebro-spinal fever that it required time to settle the diagnosis. One case which was a source of disappointment occurred in my service at the New York Hospital, where the patient died. An autopsy revealed the characteristic lesions of typhoid fever."

DR. C. S. WOOD said: "It may be proper at this time to compare our present epidemic with one of the first we have any knowledge of in this country. In drawing that comparison an evident difference occurs. Dr. Smith has referred to the epidemic form which spread all over the country. It commenced here, although not as severely as some epidemics which we have had. In 1866, after the war, I was invited by some members of the Board of Health to confer about this disease, which was beginning to show itself in New York City. I may be permitted to refer to the connection supposed to exist, as the author of the paper has stated, between these different forms of disease.

"In Broome, Chenango, Cortland, and some of the western counties of the State, in 1847, there was a severe epidemic of dysentery, from which large numbers died. At the end of three years the disease had nearly disappeared. That was the only epidemic in the country at that time. In 1851 a second epidemic of dysentery occurred, extending all over the country among the farmers, and it even extended to the people living in the best hygienic conditions. After the subsidence of this epidemic, which was less severe than the former one, cerebro-spinal meningitis followed. This also occurred not in towns as much as in the surrounding country, and dysentery accompanied it. These two diseases progressed side by side for three full years with large fatality. In nearly all the severe cases the disease assumed the epidemic character of spotted fever. When the epidemic had begun to decline we saw very few cases of spotted fever, just as now, because the epidemic when on the decline is much less severe.

"At the time when the complications were, as stated by Dr. Fruitnight, of a pulmonary character, I recollect a number of cases where men would go about their business in the morning, would return in the afternoon with a chill, and become delirious before midnight.

"After the first year the number of cases did not diminish as did the severity of attack. In this epidemic there were comparatively few people attacked; the patients were, in large proportion, adults from fifteen to thirty-five years of age. There was no connection, so far as could be observed, between the disease and pneumonia.

"In New York City the disease is largely among children, just as is diphtheria. They are, of course, more susceptible to it, and if the epidemic is on the decline they would be the first attacked. I have seen here comparatively few adult cases of cerebro-spinal fever; perhaps one dozen altogether.

"It is always convenient to attribute disease to sewer-gas and defective drainage, whereas in the most severe epidemics I have ever witnessed there was no sewer-gas within twenty miles. In the epidemics here alluded to from 1853 to 1856—cases attacked lived on rolling ground, on the hills, in the valleys, and beside running water. One case would occur in one locality and another perhaps five or six miles away, there being no connection whatever between them. Having seen those two severe epidemics of the fearful disease, with their heavy mortality, I have very grave doubts about the etiology usually attributed to it in this city. I do not think sewer-gas or defective drainage has much to do with its production. It seems that when one epidemic declines another succeeds; and whence it comes and where it goes we do not know. We are apt to attribute everything to bacteria and micro-organisms; but I am strongly of opinion that those organisms are rather the effect of disease than its cause."

In reply to the inquiry of Dr. Baruch, Dr. Wood stated that he did not regard the disease as contagious or infectious.

DR. C. L. DANA said: "One question alluded to by the author of the paper is of particular interest, viz.; whether some of the cases that are reported as cases of cerebral paralysis in children are really not cases of cerebro-spinal fever. The suggestion is new to me, and is one I shall be glad to think upon and study. We have, as yet, however, no very great evidence that these paralyses are really due to that trouble. Almost all the cases of cerebral paralysis in children are hemiplegic, and this limitation of the lesion in most of the cases would preclude the possibility of cerebro-spinal fever.

"Cerebro-spinal fever is the precursor of chronic nervous disorders that are often very intractable. The fact of their origin in cerebro-spinal fever is a help to us in throwing light on the pathology. I have had cases of affection of the upper part of the cord especially, following cerebro-spinal fever. The patients were women, and they had severe pains and other symptoms characteristic of that disorder; and the fact that they once had a meningitis justifies us in assuming that many of the cases of spinal irritation are cases of chronic thickening of the meninges, with hemiplegia and irritation of the nerves. In spinal meningitis the lesions are in the upper part of the cord, and that would explain why, in those cases that I have seen, the spinal irritation is mostly an upper dorsal one, while the symptoms are sensory and not motor.

"The most common complications are such as Dr. Peck might speak upon—deafness and loss of sight. I am interested in the nature of the fever because I have been working more or less in the laboratory, and have had opportunities to see the micrococci found in investigations of this disease. It has been stated by bacteriologists that the micrococcus is pathogenetic of this disease, but on this point further research is necessary."

DR. B. THOMPSON said: "I have not seen in my cases of cerebro-spinal fever any spots, and am glad to hear Dr. Leale and Dr. Wood speak of the microbes as being the effect rather than the cause of the disease. The statement has been made that it has occurred in the country where the drainage has been perfect. In this respect it resembles typhoid fever, some of the most typical cases of which I have seen in the mountains of West Virginia. While sewer-gas no doubt plays an important part in many of the diseases occurring in our cities, increasing their severity and possibly the death-rate, still I do not think they are always to be regarded as prime factors in their etiology."

DR. CHARLES E. YOUNG said: "I have a case at present under observation which has been diagnosed as cerebro-spinal meningitis. My experience with the disease has been limited to four cases. Two of these were of the epidemic variety, and were seen in the summer of 1882. They were children in the same family, and both recovered. Their temperature went up to 103° and 104°. Another was that of a woman, twenty-six years of age, who had the characteristic eruption and tympanitis. The temperature in her case was at no time above 102°. The fourth case may come under the head of some of those spoken of by Dr. Smith as belonging to a class of cases

often diagnosticated as simple paralysis. This was a child with temperature running up to 104°, 105°, and 106°. The attack began with most obstinate vomiting, which continued for several days; shortly afterward, before the death of the child, there was slight rigidity. No eruptions whatever occurred in this case."

DR. H. D. CHAPIN said: "I desire to mention a case of cerebro-spinal fever complicated with syphilis. The individual had syphilis, and while this was in active progress the patient took cerebro-spinal meningitis and died."

DR. ROBERT NEWMAN said: "The case of the school-teacher related by Dr. Fruitnight and Dr. Leale is interesting. It shows that in cerebro-spinal meningitis there may be an apparent recovery of the patient, while the result of the inflammation of the meninges may continue and cause an ailment which finally ends in death. I know of a similar case where death was not so sudden. The patient recovered slowly, and was particularly benefited by an ocean voyage. The fresh air had a great deal to do with making him feel better. As soon as the patient returned to New York, to the old locality where the disease was contracted, there were symptoms of depression, with piercing headaches, which finally ended in death in one night. In such cases an ophthalmoscopic examination of the eyes would be important, in order to see what changes have taken place there. I was in hopes that Dr. Peck would bring out these points and tell us about these examinations. In regard to the etiology, it is my firm belief that the chief factors are foul air and overexertion of the brain sufficient to bring about inflammatory processes. The first case I ever saw was unquestionably brought on by hard study in a small room in which the air was made still more foul by the burning of a kerosene-lamp. That case proved fatal."

DR. E. S. PECK said: "I desire to pass around these two preparations of the temporal bone, one of which shows the cavity of the middle ear with the round and oval windows, the course of the chorda tympani and other tympanic nerves, the exceedingly thin roof of the tympanum, the near proximity of the lateral sinus and the osseous Eustachian tube; the other is opened so as to exhibit the aqueduct of the cochlea, the thin scale of bone over the aqueduct of the vestibule, the course of the superior petrosal groove, and the three semicircular canals. They are purely anatomical preparations, but they serve to explain the course of the aural complication of cerebro-spinal meningitis by the aqueduct of the cochlea rather than by the middle ear.

"Among a number of bony preparations of aural disease in my possession, there are two specimens showing the involvement of the petrous bone due to cerebro-spinal fever. There is evidence in both these cases that the pus travelled along the acoustic nerve-sheath, and that exudations were present even in the labyrinth. The history of neither case conveys information as to whether there was pus in the middle ear, or even congestion of this portion of the auditory apparatus.

"I was fortunate enough to spend an afternoon with Von Tröltsch, in Würzburg, some years ago, when he showed me a large number of petrous bones, some of which were the results of autopsies in cases of cerebro-spinal fever. It was his opinion that the internal ear was the part of the auditory apparatus usually involved, by means of pus following along the acoustic nerve; and with this opinion the experiences of Luschka and Lucæ coincide. Von Tröltsch also states that some of the autopsies in cases of cerebro-spinal fever with deafness show pathological changes in the fourth ventricle of the brain. The distinguished author of the paper, in a valuable contribution on this subject published in THE MEDICAL RECORD, December, 1883, wrote of the frequency of a mild form of inflammation of the middle ear, with a return of hearing power. He also stated that suppuration of the middle ear may occur; and, further, that deafness occurs in one patient out of ten. With this opinion Roosa strongly concurs, and bases his conclusion on the fact that bone-conduction of sound remains to a limited extent, this being an indication of functional ability on the part of the acoustic nerve. I do not think, however, that autopsies will bear out this theory. A singular clinical fact in this connection is that facial paralysis rarely occurs as a complication. Its absence is used as an argument to prove the absence of inflammation of the acoustic nerve, with which it lies in close contact."

DR. SMITH asked Dr. Peck how he accounted for the fact that deafness is always bilateral.

DR. PECK replied that it was due to the basilar tendency of the meningitis; that many cases of simple meningitis occurred with unilateral deafness or monocular amblyopia.

Dr. Peck, in reply to inquiries of Dr. Dana and Dr. Newman, further said that he had made ophthalmoscopic examinations of cases of chronic cerebro-spinal meningitis, and of simple meningitis, in which there was perioptic œdema, succeeding to infiltration of the optic sheath. Some of them had loss of central vision, total or partial, while in the equator of the eye the retina appeared normal. "Almost all cases of inflammatory œdema of the basal meninges are followed by *neuritis descendens* and *neuritis optica*. I am now treating a patient, sent by Dr. Leo, for the relic of an old meningeal œdema. The patient is a lad, seven and a half years of age, who, in infancy, had severe convulsions, evidently due to cerebral congestion. The child was sent on account of alarming beatings in the head and conjunctival trouble. The right eye could count fingers at two feet; the left eye had a vision of $\frac{2}{10}$; there was no anomaly of refraction; both lower lids were slightly granular. Loss of vision was not suspected. The beatings could be traced along the superior longitudinal sinus, and over the parietal and temporal bones of the right side of the head. With the ophthalmoscope the right eye gives evidences of perioptic œdema, chiefly in the outer and inferior parts of the disk. There are, in addition, three dirty-white spots of good size around and very near the disk; they are spots of atrophic choroiditis, and are totally devoid of pigment deposits. Under the use of potassium bromide and ergot these beatings have disappeared; and in three months the right eye, with a previous vision of finger-counting at two feet, sees $\frac{2}{10}$, and the left better than $\frac{2}{10}$. I cannot believe that in all cases the ophthalmic involvement is peripheric, as shown in affections of the choroid, iris, and cornea, but often central, as in descending neuritis, optic neuritis, etc.

"I would like to add here that it must not be deduced from this that all infantile convulsions are manifestations of true meningitis."

DR. A. R. ROBINSON said: "I think some of the cases cited to-night as cases of cerebro-spinal fever should be excluded. I do not think that there is any direct connection between syphilis and the special exciting agent of cerebro-spinal fever. The simple existence of micrococci alone is not regarded as sufficient proof of the bacterial origin of any disease. As regards cerebro-spinal fever and pneumonia, I have never noticed in the cases coming under my care any connection to exist between them. Three years ago I was called to see a child who had been vomiting, whose temperature was 102½°, and on whom these eruptions were present. The diagnosis was held in abeyance. The next day the child was, to all appearances, perfectly well, and I did not intend to go again. But on the next day I was informed that the child was not so well. I went to see it, and there was nothing to lead me to suppose that it was cerebro-spinal fever. On the fifth day the head was drawn back. I would like to know if that case was not an unusual one—the symptoms being so severe in the first twenty-four hours, and then the patient appearing to get well."

In closing the discussion, DR. SMITH said: "I think I can answer the question of the President. It is a remarkable fact, of which there is no satisfactory explanation, that patients occasionally present well-marked sy—

toms of the disease, such as intense headache and rigors, which entirely subside for some hours, perhaps for a whole day, and then recur, and the disease runs its usual course afterward. I have in mind a case seen some years ago in Thirty-fifth Street, where a young man had the disease so severely that he went into convulsions. But the convulsions did not occur the first day. The intense headache, however, came on with vomiting and fever. The next day he was so far relieved that he went to Brooklyn on business. On his return the symptoms reappeared with convulsions. This fact is stated by different writers as peculiar to this disease.

"In regard to its contagiousness, it has been said that in the epidemic form it is contagious, and in the endemic it is not. I do not believe that it is contagious at any time. If so, the degree is so slight that there is no need of isolating patients. In the epidemic of 1872 I saw perhaps over fifty patients. The great majority of them were single, isolated cases. There were some multiple cases—that is, in one instance, two in a family; in another, three; and in another, four; but in many of these cases the sanitary conditions were obviously very unfavorable. The four cases in one family occurred in Fifty-fifth Street, near the river. They carried on the business of making what is called head-cheese, and the heads of hundreds of cattle were there in a condition of decomposition.

"I have never seen any evidence of its contagiousness, and do not think that even in its most severe epidemic form there is any need of isolating those affected.

"As regards the diagnosis, I know that many cases do have hemiplegia on the second day. In the commencement of the severe form of the disease there is more or less congestion of the cerebral substance in connection with meningeal inflammation. In cases where there is any doubt, hemiplegia may occur a few days after the attack, and on that account some consider it a distinct disease from cerebro-spinal fever.

"I do not say that mistakes may not be made in the other direction—that many cases are called cerebro-spinal fever which are really not so. So far as my observation extends, we do not have full statistics of this disease.

"Cerebro-spinal fever is a disease *per se*; that is, it is due to a specific principle which is entirely distinct in its nature from any other disease. I simply stated what foreign observers have mentioned in regard to its occurring as a complication of pneumonia. I have met it occurring in connection with some other diseases, but not with croupous pneumonia; as, not long ago a case of entero-colitis, in which I expressed the opinion to the attending physician that in all probability the cerebro-spinal irritation had a reflex origin, but the physician afterward informed me that it was undoubtedly a case of cerebro-spinal meningitis, because the intestinal disease got well and the other disease continued."

BAD BREATH.—Dr. Frank H. Gardiner believes that decaying particles in the mouth as far back as the pharynx vault taint the breath exhaled very little, if at all. Mouth-breathers have a bad breath when the tonsils are enlarged, or when cheesy masses exist in the tonsillary mucous folds. Certain gastric derangements taint the breath only when gases are eructated through the mouth. The principal cause of bad breath is decomposition in the intestinal canal, the retention of fecal matters in the transverse and descending colon, and the absorption of gases into the circulation, finally exhaled by the lungs. Catarrh (nasal, pharyngeal, laryngeal, or bronchial) causes bad breath. Medicines or aliments which undergo chemical changes below the œsophagus may, by rapid absorption through the stomach-walls, or immediately below, give to the breath the characteristic odor. This bad breath is often a source of serious annoyance to patients, and the fact that it has more than a local cause is too often ignored by the physician who, therefore, fails to cure it.—*Dental Review.*

Correspondence.

OUR LONDON LETTER.

(From our Special Correspondent.)

PSORIASIS AND RHEUMATISM—INTUSSUSCEPTION CAUSED BY TUMORS—THE PRESIDENT OF THE COLLEGE OF PHYSICIANS—THE WHEELHOUSE AND FOSTER ELECTION EXPENSES FUND—THE PHARMACY BILL—THE LATE DR. BRADY—THE WIRE-TREATMENT OF THORACIC AND ABDOMINAL ANEURISMS—THE SOCIETY MEETINGS—THE BRITISH MEDICAL ASSOCIATION—EXCLUSIVENESS IN MEDICAL SOCIETIES.

LONDON, April 12, 1887.

PSORIASIS and its relations formed one of the topics discussed at the last meeting of the Clinical Society. Sir Dyce Duckworth read the notes of a case in which well-marked psoriasis was associated with rheumatism. Salicylate treatment was adopted, but it proved powerless to reduce the temperature or control the arthritic disease. Arsenical treatment was therefore substituted for it, and under this a steady improvement went on. Local treatment was also employed for the psoriasis. The latter gradually became transformed into diffuse exfoliative dermatitis (pityriasis rubra). Sir Dyce Duckworth observed that psoriasis was not uncommon in rheumatic persons, especially in those suffering from rheumatoid arthritis. Dr. Radcliffe Crocker remarked that his experience also pointed to the possibility of a connection between rheumatism and a previous dermatitis. Any form of dermatitis might be the antecedent. He also remarked that psoriasis was the most common antecedent of pityriasis rubra when the latter did not occur as the only disease. Dr. Barlow said he had also observed the triple association of psoriasis, pityriasis, and rheumatism. When once the skin-lesion had taken on the exfoliative type, this form would continue.

Mr. Arbuthnot Lane related a case of intussusception produced by the presence of a tumor growing from the mucous membrane of the transverse colon. The patient was a child, eight years of age. The tumor came down on two occasions and protruded from the anus. The second time it was removed, and on subsequent examination no signs of an intussusception could be made out. Mr. Treves said the mildest cases of intussusception were often those associated with large polypi in the colon. Polypi were present in five per cent. of the cases of intussusception. A mass of epithelioma in the wall of the bowel might also lead to the formation of an intussusception. Mr. Barker said he thought the latter was not a very frequent cause of intussusception. Mr. Bryant was of opinion that intussusception, caused by tumors were not very rare, but that in adults they were not recognized sufficiently. He believed a fair proportion of the cases in adults were due to tumors. In illustration, he narrated the case of a lady, eighty-four years of age, who had lately been under his care. The abdomen was tympanitic, and there was acute obstruction following on long-standing bowel-trouble. On examination per rectum a growth as large as an egg was detected. It was readily removed, and recovery ensued. The growth was of a coarse, villous nature.

At the Medical Society Sir Dyce Duckworth presented a case of ulcerative endocarditis simulating typhoid fever and acute tuberculosis. The patient was a girl, twenty years of age, in whom there was no history of rheumatic fever, but some of the joints were swollen. The necropsy revealed no tubercles or splenic infarctions, but the mitral valves were much diseased and fungating.

Mr. R. W. Parker read a paper on "The Alleged Dangers of Starch-containing Foods during the Period of Infancy." He thought these dangers had been greatly exaggerated. He was no advocate for artificial feeding, but he thought that too much stress had been laid upon its effects. He attributed more importance to the

hygienic surroundings. Mr. Parker said he thought that in many cases the mortality of artificially fed children was due to debilitating influences of various kinds acting on the parents before the birth of the children.

To the surprise of many, Sir William Jenner has been re-elected President of the College of Physicians for the seventh time. This is no doubt in consequence of the desire to carry through the new policy of the college of endeavoring to obtain powers to grant a degree in medicine. Sir William is a firm advocate of this scheme, and it is very doubtful whether any other man would be able to exercise the same influence. Sir Andrew Clark might, possibly, if Mr. Gladstone were in power. Sir William Gull is an able man, but has made many enemies. In connection with this election it is curious to observe that only one hundred and twenty fellows took part in it, of whom only seventy-three voted for Sir William Jenner at the first ballot. Neither members nor licentiates have a voice in this or in any other matter connected with the college. The presidency and all other offices are therefore in the hands of those few fellows who take an active part and settle many matters across each other's dining-tables.

The process of sending round the hat for the "Wheelhouse and Foster Election Expenses Fund" has not been attended with very happy results. No list of subscribers has been published, but as, with every effort that could be made, only some eighty pounds odd has been raised, it must be concluded either that the number of the admirers of these gentlemen whose admiration is sufficiently warm to unloose their purse-strings is very small, or that the greater number of those donating have reserved for this occasion the proverbial threepenny bit. As three hundred and thirty-eight pounds twelve shillings and twopence has been expended, Messrs. Wheelhouse and Foster have had, after all, to pay most of it themselves, and considering that the office to which they have been elected is a paid one, they can well afford to do it.

The Pharmacy Bill has passed the second reading in the House of Commons, and is likely soon to become law. It gives more power to the Pharmaceutical Society and authority to create a compulsory curriculum for pharmacists. Times are so changed that we can scarcely realize that it is but little more than a quarter of a century since anyone who chose could open a chemist's shop and sell poisons without let or hindrance.

A notable figure has just disappeared in the person of John Brady, F.R.C.S.I.—generally called by the public Dr. Brady. For twenty-seven years he was M.P. for Leitrim, on the Liberal side, but his genial and kindly disposition made him friendly with all parties. He was for years the only doctor in the House of Commons, and he was always ready to give his time and influence in the service of his professional brethren. One Act of Parliament was certainly entirely due to his efforts, and others he greatly assisted in passing. He practised in London for several years, on the south side of the Thames.

London, April 16, 1887.

The treatment of thoracic and abdominal aneurisms by the introduction of steel wire into the sac was discussed very fully at the last meeting of the Medical and Chirurgical Society, and the subject occupied the attention of the Society for the whole evening. Three cases were related in which this method of treatment had been adopted, but the record is not very encouraging, as all of them terminated fatally. In one of these, though, the operation did not apparently contribute to the fatal result. The first case was read by Dr. J. J. Pringle, and was that of a man, forty-six years of age, with an aneurism in the upper part of the abdominal aorta. He was admitted into the Middlesex Hospital, and general treatment was employed for a month. No benefit resulting, he was operated on by Mr. Henry Morris. It was not found possible to introduce more than a foot of the wire. No hemorrhage of consequence occurred, and the patient went on satisfactorily for two days. He then became almost maniacal, and died of asthenia in five days. At the necropsy both sides of the heart were found distended with mixed clot. The aneurism was also found filled with clot, more than a third of which was laminar, and presumably due to the introduction of the wire. The second case was one of sacculated aortic aneurism in a man forty-eight years of age. Iodide of potassium and a restricted diet having been tried for nearly two months without benefit, it was determined to operate on him. Mr. Pearce Gould operated on him in the Middlesex Hospital, and introduced thirty-two feet of steel wire through a Southey's cannula into the aneurism at the most prominent part of the swelling, viz., in the third interspace on the right side. A good deal of blood was lost at the time of the operation, and from one of the two punctures made a considerable quantity of reddish serum continued to drain for some days. On checking this by pressure, swelling of the subcutaneous tissue occurred, the skin became gangrenous, and death speedily ensued. At the necropsy the intra-thoracic portion of the aneurism was found to have a small but distinct sac springing from the first portion of the arch of the aorta, which was much dilated. The extra-thoracic portion of the aneurism, however, had no distinct sac, but was bounded by infiltrated muscle. A very dense mass (consisting of the wire and loose fibrinous clot) filled, but was not adherent to, the sac. The remaining case was also that of a patient at the Middlesex Hospital, but under the care of Mr. Hulke. The patient was a sailor, and the aneurism (subclavian) came on as the result of injuries received in falling from a height. After various treatments had been pursued at intervals for two years, the aneurism was a little smaller, but not otherwise much improved. The patient left the hospital, but returned in a month with increase of pain and swelling. Mr. Hulke operated, and introduced thirty-three feet of steel wire through a cannula. Some degree of hardness of the sac followed the operation, but no other change could be made out. Five days after the operation there was a good deal of pain and increased arterial tension. This was relieved by bleeding. On the thirteenth day from the operation the patient died. On examining the parts after death only a small amount of clot was found about the wire, and there was no appearance of inflammation. In the discussion on the three cases several speakers commented unfavorably on the great length of wire which was introduced. Mr. Bryant suggested that good fishing-gut would be preferable to steel wire. This opinion Mr. Morris seemed disposed to accept, but he remarked that he was not previously aware that fishing-gut could be made to coil up. Mr. Pearce Gould said he should not in future cases use anything approaching the quantity of wire used in his recent case. He agreed with Mr. Bryant that the evidence was against the employment of steel wire.

In the course of another month many of our medical societies will have suspended their labors for the season, only to resume them in October. By a sort of tacit convention nearly all the meetings of societies take place only during the winter months, and as they are nearly all held in the evening the temptation to quit a warm fireside is sometimes not very keen to doctors who have had a busy day. Taking both town and country into consideration the number of societies devoted to the medical sciences is very numerous. Almost every provincial city of any consequence has its own medical society, besides a local branch of the British Medical Association. The latter, indeed, is now almost co-equal with the distribution of the profession—in England, at any rate, though perhaps not in Scotland and Ireland. Its various branches, no doubt, fulfil many useful, social, and scientific purposes. As regards the parent association, its chief function is that of producing the weekly *Journal*, and it might fairly be described as "a co-operative journal-producing association." The importance attached to the *Journal* is evidenced by the fact that at the new offices

of the Association the inscription is *British Medical Journal*. The impression made upon an impartial observer naturally is that the Association is a mere appanage of the *Journal*, and that the sole use of its faithful members is to provide for the editor and his associates "the sinews of war" wherewith to carry it on. An organization so extensive is naturally not very exclusive. New members can be elected by the council of the Association, or by any branch council. In either case they must be nominated by three members of the Association, to *one* of whom they must be personally known. Under such conditions the term "member of the British Medical Association" really signifies little more than "subscriber to the *British Medical Journal*." An association which is always seeking to extend its members cannot be very exclusive. Everything, in fact, is sacrificed to mere numbers. One of the younger of the medical societies in the metropolis—the British Gynecological—has fallen into the same error. When it was founded proposal forms were sent to all and sundry, inviting them to join, and a not very select body has been the result. As an inducement to country doctors to join, it is stated that "the Society holds meetings from time to time in the large towns of Great Britain and Ireland."

The Neurological and Dermatological Societies have been constituted on much narrower bases. The latter is, perhaps, the most exclusive medical society in the metropolis. Its number is limited to thirty. In the event of a vacancy occurring a candidate must be nominated by at least ten members, and one black ball excludes. Its meetings are devoted entirely to clinical work, viz., to the exhibition of cases, drawings, specimens, etc. They are not announced in the medical journals, nor are its proceedings reported. In this the Society but imitates the reserve of one of the oldest of the London societies—the Hunterian—which for many years conducted its meetings in strict secrecy and would allow no account of them to appear in the medical journals. This rigidity, however, has been relaxed of late years, and its members now frequently have the honor of seeing their sayings and doings recounted in print.

LARYNGOLOGICAL HERESY.

To the Editor of The Medical Record.

Sir: The pessimistic views advanced in the various articles relating to topical medication of the upper air-passages, published in The Medical Record of April 30th, contain, in the light of my own experience, so much heresy, and are, I think, calculated to do so much damage, that I cannot refrain from protesting. As an outcome of my own experience in private practice, I feel justified in asserting the following propositions:

1. That any practitioner who is not making a *successful* use of topical medication of the air-passages, from the nostrils down to the capillary bronchial tubes, is either behind the times in general knowledge, or is lacking in skill, or is not doing his whole duty by his patients.

2. That, although cure of chronic disease in these passages usually is dependent upon removal of causes, still most chronic cases need the help of topical medication to enable the tissues to overcome the bad habits of pathological action, which habits are likely to persist, without such outside help, even after the removal of the causes. Furthermore, that many chronic cases, without removal of causes, can be brought into practically normal states by such applications, and although having a tendency to relapse, can be retained in a normal condition by occasional applications.

3. That, although the bulk of such applications, as they are usually made, are of non-effect, absolutely harmful, or only alleviative, still, when *skilfully* made, can accomplish that which is really wonderful and which cannot be done in any other manner. Even such serious disorders as laryngeal phthisis and purulent bronchitis of many years' standing may be practically cured by the help of local medication, when constitutional and hygienic treatment by themselves have been unable to effect cure.

4. That, although the establishing of nasal respiration by the purely surgical methods is the most brilliantly satisfactory work we accomplish, still, nasal stenosis and irritation is not the sole cause of disorders of the pharyngeal vault, larynx, and trachea, but, on the contrary, has a causative influence small in comparison with climate, occupation, exposure, malnutrition, abuse of the stomach, and unhygienic habits.

5. That extreme laudation of chromic acid as a means of treating nasal hypertrophy, etc., is to be deplored, for the fact is, that of all known agents for effecting this purpose, it requires the most skill in its *safe* use. It is very easy to apply chromic acid in the nose, and it is very easy to inflict great damage by its use.

6. That instead of our *armamentarium* being uselessly large, we have need of its greater extension. Every case operated on differs in some respect from others; hence there is a field open for the continual production of instruments that shall be best fitted for each particular class of cases. It is true that there is need of greater visible simplicity in the fittings of our operating-rooms, for the exhibition of a large amount of complicated machinery is terrifying to the average patient. The ideal equipment should comprise a large, inexhaustible cautery battery, some reliable mechanical motor for drilling, powerful pumps and large reservoirs for compressed air for the extended production of sprays, especially of the nebulized sprays, means for the production of hot vapors and the convenient taking of fuming inhalations, as well as for administering air of varying processes and of medicinal gases. Such an equipment is quite complicated and bulky, and as most of it should be out of sight of the patient, it is apparent that there is an inventive field still open. The utility of all these mechanical means can be affirmed by others, as well as by the writer. In the not distant future, a chest clinic will not be considered well equipped without a complete apparatus for the topical application of remedies. The benefit that may be conferred by the topical treatment of the coincident bronchitis of phthisis is of itself sufficient to rank medication, by the inhalation of nebulized remedies, as one of the most valued practical procedures of medical therapeutics.

7. But the production of best results through topical medication of the air-passages does require *special* knowledge and skill, which can only be gained by experience on the part of those having natural adaptability. The art, so far as I know, in its refinement, is *not* taught in the books nor in the schools. Nevertheless there are many professional brethren who can, out of their individual experience, substantiate the propositions here made. In a general way, if I can judge from observation of the practice of the unsuccessful topical applicators, in comparison with those who are successful, those who fail err in judgment as to selecting the best means for fulfilling the indications presented, are too harsh in the treatment, use too strong remedies, stimulate too much, soothe too little, do not take sufficient time in making applications, nor make them with sufficient frequency. It is my habit to charge many of my patients a contract price, rather than to charge so much per visit, so as to encourage them to make as many visits as may be desirable. The curative treatment of most dispensary patients by the means now at command is practically impossible. The necessary time could not be given to the patient even if proper equipment and skill should be available. There is then some reason for the sneering remarks frequently made relating to the "specialists and their astringents." But when, without the anæsthetic aid of cocaine, a subacute nasal catarrh can be cured at one sitting; when post-nasal catarrh caused by habitual gormandizing, or by the congestive action consequent upon heart lesions, can be controlled by quite infrequent applications; when a painful sore-throat can be absolutely cured in five min-

utes; when a husky-voiced singer can at one sitting be put into condition to sing splendidly all day; when the destructive ravages of laryngeal phthisis can be stopped, the parts healed, in some cases the voice partially restored, and the patient restored to a partially useful life; when very great comfort, and in many cases curative aid can be extended to cases of pulmonary phthisis; when "colds" that would ordinarily run for two or three weeks can be instantly alleviated and cured within three days; when patients can be helped to reside in health and comfort in localities, the climatic disadvantages of which would be otherwise insurmountable; when all these optimistic facts, and others that could be named, as resulting from the skilful use of the present methods of local treatment of the air-passages are considered, I submit that the general tenor of the articles referred to in the beginning of this communication is an unjust disparagement of the art of laryngology as it now exists in its best forms.

J. M. W. KITCHEN, M.D.

168 WEST FIFTY-EIGHTH STREET.

SHOULD DOCTORS FURNISH MEDICINES?

TO THE EDITOR OF THE MEDICAL RECORD.

SIR: I beg to be allowed space to "second the motion" contained in Dr. McManus' communication in THE RECORD of the 9th inst., "Should Doctors furnish Medicines?" It is a timely and wise hint. The evil of counter-prescribing by druggists, to which he calls attention, is a growing one, and the exceptions to the rule of competent and honest druggists who attend to their own legitimate business, strictly limiting themselves to its proper bounds, are getting to be more numerous. Out of this evil have sprung nearly, if not quite, all the complaints of physicians in recent times against druggists; the nuisances of travelling salesmen, sample packages, and bogus journalism, or proprietary-medicine certificates and pamphleteering. If physicians would become skilled in the preparation of their remedies, many a doctor will not only acquire "a familiarity with drugs, which was, perhaps, sadly needed," as Dr. McManus suggests; but will do much to correct the evils of which physicians have so much now to complain. It will encourage legitimate pharmacy and tend to drive out of its ranks the class of druggists who deal in the cheaper and inferior sorts of drugs and proprietary preparations, and with them the manufacturers of them. We would be far from bringing about any antagonism between ourselves and patients on the one side, and honest and competent pharmacists on the other. We need their services and their hearty good-will and co-operation, and right well has the *science* of pharmacy in our times shown itself the handmaiden and servant of the medical profession in the elegant and efficient fluid extracts, properly prepared tinctures and pills, etc., so easy of carriage and dispensing by the physician. With such means it is easy enough for physicians to establish a suitable and proper independence in the matter of furnishing medicines for their patients.

There is no need, however, of *supplanting* the druggist's business. It is only the capacity of becoming his own druggist for such emergencies as may arise from time to time, to be able to secure the best remedies in his practice, and to prevent improper interference on the part of such druggists with his written prescriptions as need it, which the physician needs.

With such a knowledge as all physicians should have of the materia medica and of the drug market, there could be no difficulty on the part of physicians in having druggists fill their prescriptions with the best and purest medicines, or failing in this, to do it themselves.

In regard to the sources of supply it can be truly said that it requires some patience and care in making proper discrimination among the various pharmaceutical manufactories. If physicians are not hopeless gudgeons in this matter (and they need not be), by shunning the drumming and advertising humbug and nuisance, and by a little patient inquiry and observation at the large centres of medical supplies, they will readily find out whose fluid extracts assay nearest to the claims set forth, and are of most uniform strength, and whose entire list of drugs and officinal preparations are most correctly prepared, and nearest to the officinal standard of purity and uniformity.

There is no need that "every physician should be his own druggist" at all times and always, any more than that every lady-housekeeper should do her own cooking and housekeeping, etc. The lady-housekeeper should thoroughly understand these things, however, to supervise her servants, and to do it herself when emergencies may arise requiring it; and by actual practice only can these arts be mastered. There is no intention to cast any slur on the highly developed science of modern pharmacy and scientific pharmacists by contrasting them with a menial order of work and servants. The contrast is used simply as the best illustration at hand to set forth the proper relation of physicians to their medical supplies and to pharmacists.

Very truly yours,

POCKET-CASE.

APRIL 13, 1887.

THE BEST TESTS FOR ALBUMIN.

TO THE EDITOR OF THE MEDICAL RECORD.

SIR: In your report in to-day's issue of the discussion of my paper, "The best Tests for Albumin," it is stated that I said: "Heat was the most available of all tests, doubtless, if all precautions were observed." This is incorrectly reported, and is so entirely at variance with my belief and experience, as well as with the opinion expressed in my paper to the effect that heat is "one of the most cumbrous of the important tests" (see p. 486), that I beg to correct it.

I will avail myself of the opportunity of saying that I am confident that a trial of the nitric-magnesian test will abundantly compensate anyone for the slight labor of preparing it. Thus far I have found no test cover so much ground.

Respectfully yours,

HENRY B. MILLARD, M.D.

NEW YORK, April 30, 1887.

LOCAL TREATMENT IN DIPHTHERIA.

TO THE EDITOR OF THE MEDICAL RECORD.

SIR: In a communication in THE MEDICAL RECORD of this date, from Dr. J. Lewis Smith, the following sentences occur: In speaking of "treating the nostrils" Dr. Smith says, "I have used various syringes with tapering and bulbous nozzles, and Delano's hand-atomizer as employed by Dr. Billington. The objection to the latter is that the sharp point is very apt to prick the nostril and cause bleeding if the child resist and rotate the head." It is impossible that this should be true, for the reason that neither the Delano nor any other atomizer has ever been "employed by Dr. Billington" in the treatment of the nares in diphtheria, and such use of it has been mentioned by him only to be deprecated. As this has so lately been twice done by me in THE MEDICAL RECORD, it is with mortification that I am compelled to ask further space for this correction. Not doubting that this misrepresentation, though so extreme, was quite unintentional on the part of Dr. Smith, I shall only, by way of pointing a moral, crave his indulgence for the inaccuracies of the average "reporter" to which he alluded.

Yours truly,

C. E. BILLINGTON, M.D.

NEW YORK, April 30, 1887.

Army and Navy News.

Official List of Changes in the Stations and Duties of Officers serving in the Medical Department, United States Army, from May 1 to May 7, 1887.

FRYER, BLENCOWE E., Major and Surgeon. Ordered for examination by Army Retiring Board at San Francisco, Cal. S. O. 101, A. G. O., May 2, 1887.

STERNBERG, GEORGE M., Major and Surgeon. Assigned by the President to the special duty, under the Treasury Department, of "investigating the merits of the method practised in Mexico and Brazil for preventing yellow fever by inoculation." Relieved from duty as Attending Surgeon and Examiner of Recruits in Baltimore, Md. S. O. 101, A. G. O., May 2, 1887.

BILLINGS, JOHN S., Major and Surgeon. Granted leave of absence for ten days, to take effect May 3, 1887. S. O. 98, A. G. O., April 28, 1887.

MIDDLETON, J. V. D., Major and Surgeon; HAPPERSETT, J. C. G., Major and Surgeon; AINSWORTH, F. C., Captain and Assistant Surgeon. Appointed to assemble at U. S. Military Academy, West Point, N. Y., on June 1st, to examine into the physical qualifications of the members of the graduating class and of the candidates for admission to the Academy. S. O. 102, A. G. O., May 3, 1887.

LORING, LEONARD Y., Captain and Assistant Surgeon. Sick leave of absence still further extended six months, on surgeon's certificate of disability. S. O. 103, A. G. O., May 4, 1887.

BIART, VICTOR, Captain and Assistant Surgeon. Sick leave still further extended one year on surgeon's certificate of disability. S. O. 99, A. G. O., April 29, 1887.

EWING, CHARLES B., First Lieutenant and Assistant Surgeon. Ordered from Fort Leavenworth, Kan., to Fort Lewis, Col., for temporary duty. S. O. 100, A. G. O., April 30, 1887.

Official List of Changes in the Medical Corps of the United States Navy for the week ending May 7, 1887.

SHAFER, JOSEPH, Assistant Surgeon. Detached from the Minnesota, and ordered to the Ossipe.

SIMON, W. J., Surgeon. Ordered to the U. S. Steamer Boston.

HENRY, C. P., Assistant Surgeon. Detached from Hospital, Philadelphia, and ordered to the Boston.

MEANS, VICTOR C. B., Assistant Surgeon. Detached from Hospital, Mare Island, and ordered to the Hospital, New York.

SIMONS, MANLY H., Passed Assistant Surgeon. Detached from Naval Academy, and ordered to the Constellation.

DIEHL, OLIVER, Passed Assistant Surgeon. Detached from Hospital, New York, and ordered to the Hospital Philadelphia.

CHLORAL ERUPTION.—Dr. Barbillion has described a variety of erythema appearing in patients under the influence of chloral, upon the administration of alcohol. The chloral eruption was first recognized by Jastrowitz in 1869, and has since been met with by numerous observers. The point to which Dr. Barbillion calls attention is the almost mathematical regularity with which the erythem appears under certain circumstances. Given a child of from four to eight years of age, who is taking from one-half to one drachm of chloral daily in repeated small doses, the administration of alcohol in the form of wine or spirit mixture will cause the appearance of the rash in from fifteen to thirty minutes.—*The Lancet.*

Medical Items.

CONTAGIOUS DISEASES—WEEKLY STATEMENT.—Report of cases and deaths from contagious diseases reported to the Sanitary Bureau, Health Department, for the week ending May 7, 1887:

	Cases.	Deaths.
Typhus fever	0	0
Typhoid fever	5	1
Scarlet fever	48	11
Cerebro-spinal meningitis	12	9
Measles	85	5
Diphtheria	78	44
Small-pox	30	7
Yellow fever	0	0

"INSTANTANEOUS" REMEDY FOR LUMBAGO.—Professor Burggraeve, Germany, recommends the following: ℞. Collodion, tincture of iodine, liquid ammonia, equal parts. M.—Sig.: Apply widely over the parts with a camel's-hair brush.

ARTIFICIAL HUNYADI JANOS WATER FOR CONSTIPATION.—℞. Magnesii sulphatis, sodii sulphatis, āā ℥ ss.; potassii sulphatis, gr. ij.; sodii bicarbonatis, gr. viij.; sodii chloridi, gr. xx.; aquæ ad ℥ viij. M.—Sig.: Wineglass before breakfast.

FORMULA FOR RHEUMATISM (St. Luke's Hospital).—℞. Potassii iodidi, ʒ iij.; vini colchici seminis, ℥ ij.; tincturæ opii camphoratæ, ℥ ij.; tincturæ stramonii, ʒ vj.; tincturæ cimicifugæ, ℥ iij. M.—Sig.: Teaspoonful three or four times a day.

SOOTHING MIXTURE FOR CONSUMPTIVES.—Dr. J. B. Johnson, of Washington, writes to the *Medical and Surgical Reporter*: "Of all the mixtures for stimulating the consumptive patient, allaying his cough, and quieting his nervousness, I have found none equal to the following: ℞. Syrup liquorice root, ℥ j.; aromatic syrup rhubarb, ℥ ss.; fluid extract of opium, ʒ j.; liquor ammon. acetat., ℥ v. M.—Sig.: Shake well. Dose: A tablespoonful every two or three hours. Patients become very fond of this mixture, and it in nowise interferes with the stomach or appetite. Should constipation ensue, it is easily overcome by an occasional dose of comp. liquorice powder.

INEQUALITY OF PUPILS IN HEALTHY PERSONS.—From an examination of one hundred and thirty-four healthy recruits, Dr. G. S. Ivonoff, of Kirílov, came (*Vratch*, No. vii., 1887, p. 162) to the following conclusions: 1. Equal or symmetrical pupils, as well as equal or symmetrical halves of the face, are met with but very seldom, the former only in nine per cent. of the persons examined, and the latter only in 2.2 per cent. 2. The inequality or asymmetry is probably dependent upon an asymmetrical development of the cerebral hemisphere. 3. In 54.5 per cent. of persons, the left pupil, and in 73.9 per cent. the left side of the face, is larger than the right one.

FATAL POISONING FOLLOWING TWO VAGINAL DOUCHES WITH CORROSIVE SUBLIMATE SOLUTION.—Fleischmann, of Prague, has reported the following case (*Therapeutic Gazette*): A perfectly healthy primipara, aged seventeen, exhibited no symptom of kidney disease or of any other complication of pregnancy. To disinfect the vagina before labor two douches of 1 to 2,000 solution of sublimate were given, one before and one after examination by a midwife. It was noticed that a small amount of bloody mucus was expelled from the vagina after the douches. In a few hours abdominal pain, diarrhœa, and a rise of temperature occurred, all the symptoms and lesions of mercurial poisoning developed, nephritis, salivation, and continued diarrhœa, and, after giving birth to a living child, the patient died in coma on the ninth day after

the douches were given. The pathological anatomical diagnosis made at the autopsy was "corrosive sublimate intoxication, acute nephritis, dysentery, stomatitis and pharyngitis in the stage of ulceration, parenchymatous degeneration of heart and liver, lobar and lobular pneumonia, bilateral acute cystitis." On investigation it was found that after receiving the douche the patient had left her bed and gone about her work in the ward. It is not probable that any considerable amount of fluid remained in the vagina after the douche, as all ordinary precautions were taken to secure its expulsion. It is, however, quite possible that some of the fluid may have gone into the uterus and become absorbed by any superficial lesions which had occurred in the beginning dilatation of the os uteri. It was also true that the patient had diarrhœa before the douches were given, and in his remarks upon the case Fleischmann calls attention to the danger attending the use of sublimate in puerperal patients in whom any lesion or disordered condition of the kidneys or bowels exists. He quotes the words of a well-known obstetrician, who asserts that the use of sublimate should be limited to the disinfection of the external genitalia and hands and instruments.

Drugs which Increase and Drugs which Decrease the Secretion of Milk.—Giurleo calls attention to the peculiar properties of *Ditana digitifolia*, which, he claims, possesses the power to stimulate the secretion of the mammary glands. The author found an opportunity to try the remedy on a number of wet-nurses, and pronounces himself as extraordinarily satisfied with the results obtained. In some instances, in which the secretion was almost wholly absent, the ingestion of an infusion of the plant produced a copious supply of milk. In Italy an ethereal tincture of *Ditana digitifolia*, combined with syrup, has been known for a long while under the name of "galatiofore." The blossoms and buds of the plant, besides, possess diaphoretic properties. The same author asserts that *Rhamus alaternus* and *Ligustrum vulgare* have properties precisely opposite to those of *Ditana digitifolia—i.e.*, they decrease the secretion of milk. The author uses an infusion of these plants (forty-five grains of the leaves to six ounces of water), and orders for several days this quantity of the infusion to be used up twice a day.—*Therapeutic Gazette.*

Bright's Disease.—Professor Dieulafoy says, in relation to Bright's disease, that the nice points that authors try to make as to the particular form of lesion that exists in any given case will all fail you generally at the bedside. That, in fact, all the different lesions are often found in the same kidney, and as to which one predominates is a point that can only be determined with certainty by a post-mortem examination. His treatment all resolved itself into a milk diet and blood-letting. He insists on blood-letting whenever the patient presents any symptoms that portend uræmic convulsions. Professor Jaccoud's treatment is the same, in addition to which he is now using the inhalation of oxygen gas. He says that the number of casts or the amount of albumen in a given case he considers of less importance in a prognostic point of view than the specific gravity of the urine.—*Paris Correspondent of the Chicago Medical Journal.*

Peptone Suppositories.—Sauter prepares these suppositories with cacao butter, each containing twenty-five grains of peptone; they are mixed, and kept cold to prevent the fat from becoming rancid. In cases where patients cannot be nourished in the normal manner, they serve an excellent purpose, fifteen grains of dried peptone equalling two and one-half drachms of meat in nutritive value. Children may be given one suppository four times daily; grown persons, two or three times daily. The suppository should be lubricated with olive-oil, and the rectum previously cleansed by an enema.—*Therapeutic Gazette.*

Salol.—Dr. Kleefeld (*Berliner klin. Wochenschr.*, No. iv., 1887) gives the following report on the action of salol, a substance composed of sixty per cent. salicylic acid and forty per cent. carbolic acid: "The composition of salol induced me to give it a full trial in the town hospital (Goerlitz) during the last month, and the very satisfactory results compel me to bring it before the notice of the profession. According to our experience of salol in thirty-five cases (in which a thousand separate doses were administered) it has, like sodium, salicylate and antipyrin, a specific influence in rheumatic polythritis, but is preferable to them for the following reasons: 1. No untoward symptoms, such as collapse, arvomiting, etc., follow its use. Singing in the ears is rarely complained of, and is never severe. 2. The drug has no taste or smell, and is pleasanter to take than either of those just mentioned. 3. Its cost is low, the wholesale price in Germany being 30 marks per kilo.—30s. for 2¼ lbs. The full dose, beyond which we have never found it necessary to go, is two grammes (half a drachm) three times a day, but half this amount has often been sufficient. Finally, I am of opinion that salol is a very acceptable addition to our materia medica." Dr. Georgi, Dr. Kleefeld's assistant, will shortly publish details of the cases thus treated.—*British Medical Journal.*

Piperonal.—Piperonal is the aldehyde of piperonilic acid, which is obtained from the oxidation of piperine. It crystallizes in small, colorless prisms. Its odor is that of vanilla; its flavor like that of menthol, but more lasting. It is insoluble in cold water, but soluble in alcohol and ether. Dr. Riccardo Frignoni first discovered its remarkable antipyretic properties. It is given in doses of 75 ctgr. every two or three hours. When given in larger doses it causes nausea and eructations, but produces no more serious results. It is principally valuable as an antiseptic.

Time is Money.—Patient (to young doctor): Why do you charge me so much, doctor? I had a similar trouble last year, and Dr. Pellet cured me for half this amount. Young Doctor: How long did it take him to cure you? Patient: Three days. Young Doctor: Well I've been working on your case for nearly two weeks. You can't expect to get two weeks' work for a three-day price.

Paris Hospital Therapeutics.—It may be useful to give, in a short way, as complete as possible, the kind of medicinal treatment employed in the hospitals, and we take the service of Professor Germain Sée as a guide. The following is from the official book of the Salle (or Ward) St. Jeanne, Hôtel-Dieu:

Diagnosis.	Treatment.
Anæmia	Hæmoglobine and pepsin.
Chlorosis	Sodii arsenias.
Zona	Antipyrine, 4 gm.
Hemiplegia	Todd's potion.
Peri-uterine phlegmon	Injections, terpine, nux vomica, and gentian.
Syphilis, cerebral	Biniodide of mercury, sulphur-baths.
Chlorosis	Ferri et potassii tart., sulphate of aconitine.
Albuminuria	Tannin pill, ergotin pill, terpine pill.
Mitral insufficiency	Sparteine sulph., convallaramin.
Pericarditis and aortic ret.	Iodide of potass., digital., sparteine.
Myocarditis	Caffeine, sparteine.
Thoracic varix	Tinct. hamamelis, antipyrine, Vichy water.
Typhoid fever	Charcoal powder, naphthaline, quinine sulph., rectal injections.
Amyothropsia	Pill opium, mercurial frictions.
Mitral insufficiency	Digitalis infusion.
Dyspepsia	Charcoal powder, benzoate of soda, terpine.
Diabetes	M. Sée's régime, arsenic.
Hydroarthrosis	Antipyrine.
Phthisis	Arsenic, pill opium.
Dilatation stomach	Ipecac powder (5 ctgr.), cocaine hydrochl. (5 ctgr.); suppress all vegetables.
Not made	Jalap.
Emphysema	Terpine, iodide of potassium, pill opium, sparteine sulphate.

—*Phila. Med. Times.*

The Medical Record

A Weekly Journal of Medicine and Surgery

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Original Articles.

NAPHTHOL.

SOME OBSERVATIONS UPON ITS USE IN DISEASES OF THE SKIN.[1]

BY CHARLES W. ALLEN, M.D.,

SURGEON TO CHARITY HOSPITAL; ATTENDING PHYSICIAN NORTHWESTERN DISPENSARY, DEPARTMENT OF SKIN DISEASES; ATTENDING SURGEON TO THE BELLEVUE HOSPITAL, OUT-DOOR RELIEF, DEPARTMENT OF GENITO-URINARY DISEASES.

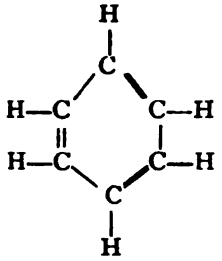
BEFORE entering upon a consideration of the therapeutic value of this comparatively new remedy, let us direct our attention for a few moments to the study of its chemical nature and the arguments to be drawn from this standpoint why it should be a drug of value to the physician. New remedies are being forced upon the profession faster than their names even can be committed to memory, and it is not to be wondered at that the busy practitioner, as a rule, practically and justly, too, ignores many of these new drugs, until those whose work and opportunities favor experimentation and investigation have determined their just value and separated those of real efficacy from the worthless. I believe the good book admonishes us to "prove all things, hold fast that which is good," but the man who hastens to carry out this precept by trying upon his private patients every new remedy proposed, will frequently find cause for regret, and his patients will often find it to their advantage to seek advice elsewhere.

I presume, therefore, that there are present to-night some who have had but little experience with naphthol, and that it will not be amiss to consider it from a chemical as well as a clinical basis, in order to appreciate better its *raison d'être*, and why, theoretically, it should be as useful as experience proves it *to* be. To premise, then, naphthol is a product of coal-tar. Now, this does not imply that the substance is found, as such, in coal-tar, but that it is produced indirectly from a substance which is so found. The substance from which it is directly obtained is naphthaline, a prominent constituent of coal-tar.

In the same way thousands of other bodies known in medicine, science, and art are produced, and are all known as coal-tar products.

Now, coal-tar itself, as is well known, is composed of a series of similarly or rather symmetrically constituted bodies. The most simple of these bodies is known as benzol, having for a formula C_6H_6, the molecule of which is graphically represented by a hexagon, thus:

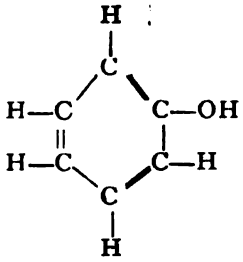
Benzol.—



This is known as the benzol nucleus, upon which other bodies are built.

Of this body there are several variations found in tar, in which one or more of the hydrogen atoms are replaced by other radicals. One of the most important of these is phenol or carbolic acid, the same being a benzol molecule in which one hydrogen atom has been substituted by an oxhydrogen radical thus:

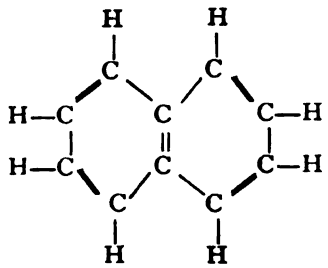
Phenol.—



Giving a formula C_6

Now naphthaline is very similar to benzol in its chemical constitution, being simply a double molecule of the latter.

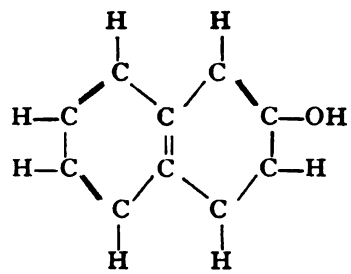
Naphthaline.—



Giving the formula $C_{10}H_8$.

Now, in the same way that phenol is derived from benzol, we find that naphthol is derived from naphthaline, and by substituting again in this double molecule an oxhydrogen radical for a hydrogen atom, we have

Naphthol.—



Giving the formula $C_{10}H_7OH$.

Naphthol is known commercially as alpha-, beta-, and hydro-naphthol. The distinction between the first two is due to the different positions of the OH radical in the molecule. The constitution of hydro-naphthol is not definitely known, but it is claimed by some to be synonymous with beta-naphthol. There is probably very little difference in the therapeutic action of these two products.

Beta- or hydro-naphthol is, then, the drug, now employed for external application, of which we speak.

It is a solid body, slightly soluble in water, having a peculiar odor, which, however, is not a very strong nor disagreeable one. It occurs in grayish-colored scales, or when redistilled as white, yellowish, or pinkish-white, large, leaf-like scales. I pass for inspection several varieties of beta- and hydro-naphthol, now to be had in New York. The imported article, prepared by Merck, in the first bottle I pass, is that which I first employed and

[1] Paper read before the Manhattan Medical and Surgical Society, April 2, 1887.

with which I have had the most experience. It has a stronger, more pungent odor than the others, and a strong whiff of it will probably cause sneezing. The second specimen resembles it in color but is more finely divided, the scales being more powder-like and the odor is much less pronounced. This is the preparation put upon the market under the name of hydro-naphthol.

The third specimen is a purified naphthol almost devoid of odor. As you see, the scales are large and flaky, and present a beautiful appearance. The next specimen is one of alpha-naphthol, which I am sorry to say is to be found upon some dispensing shelves. The reddish crystalline mass in the next bottle is an example of the impure drug, still sold and dispensed in some public institutions, if not in private shops.

Hydro-naphthol makes a darker solution in alcohol or ether than the others, but clinically it has given equally good results in my hands so far as I have employed it. Naphthol is soluble in alcohol, ether, the fixed oils, but only very slightly soluble in water. It can therefore be employed in almost any manner desirable. I have used it mostly as an ointment or collodion dressing, but have also at times employed solutions in alcohol and oil. I show you a solution of the drug in flexible collodion which I have had prepared, and you see it makes a clear brown-colored paint. I have been much pleased with this fixed dressing, and have found it of value in psoriasis, eczema, syphilitic ulcers, and a variety of other conditions

I also show you some naphthol soaps, of five per cent. strength, which are now obtainable in the shops, and which appear to me to be useful in many affections in which baths are indicated, and they can be used in conjunction with ointments or other preparations.

Unna, of Hamburg, has included among his salve and plaster muslins one of naphthol. This I have not used as yet, but theoretically it should prove an excellent application. Just now these muslins are not to be had in this city, the leading drug houses will have a supply within a short time.

I have requested some well-known manufacturers to make me some naphthol plasters, and I hope to report upon their use at a subsequent meeting.

Tar has ever been one of the most highly prized substances for external employment in diseases of the human integument. In eczema, in psoriasis, in the parasitic diseases, and in all conditions attended with pruritus some preparation made with one or the other forms of tar has often been found to give relief and speedily prove curative. Until chrysarobin was introduced for the cure of psoriatic lesions, tar was the great remedy for this disease. Now tar, as known in therapeutics, is a product of the destructive distillation of wood of various kinds, giving, according to the variety employed for the process, the ordinary pix liquida, or that known as pix burgundica, canadensis, or one of the derivative tarry oils, such as oil of cade (oleum cadini), oil of white birch (oleum Rusci), oleum fagi (beech), etc. Now, in hospital practice the application of tar and tarry preparations does well enough, but in practice in private families it will not do. Again, children and those possessed of delicate integuments will not tolerate its application. There are, furthermore, individuals who show a decided idiosyncrasy as regards tar, and at its first application suffer from inflammation, redness, burning heat, and intolerable itching in the parts to which it has been applied. For these reasons, and because of its, to many, objectionable odor and staining properties, and the fact that it occasionally produces toxic symptoms, it becomes an unavailable drug in many cases, although its virtues may be well recognized.

This well-known therapeutic value of tar is explained by a study of the constituent parts of coal tar in a measure, for all tars are quite similar, chemically. The presence, however, of a large amount of benzol (one to two per cent.) in coal tar makes this less desirable than the wood tars as a therapeutic agent; besides there is an absence of all balsams and ethers, which are peculiar to the wood tar and make it valuable.

Now, although coal tar is not, in its crude state, applicable to skin therapeutics, the presence of very large quantities of carbolic acid, naphthaline, and other more complex multiplications of the benzol nucleus has made it indirectly of vast importance in medicine.

When coal tar is distilled, the most volatile products, such as benzol, toluol, etc., come away first, and under a greater heat crude carbolic acid comes over.

Carbolic acid was first discovered some forty years ago, by Calvert, and some twenty years later became recognized as a valuable disinfectant. In course of time its value in skin diseases was recognized, but it never supplanted tar, although in many respects it has served a useful purpose. The knowledge of its antiseptic properties has lately led chemists to believe that, owing to the similar chemical construction of benzol and naphthaline, if the derivative of the former possessed such marked properties, the derivative of the latter should prove of equal value. Naphthol has therefore been elaborated, and for a number of years has been subjected to trials and experiments to prove its value. Kaposi first recommended it as an application in dermatology in 1881, and in the *Wiener Medic. Wochen.* of July 29, 1882, gives a tabular statement of the cases treated at his clinic from April, 1881, to the end of March, 1882.

The cases aggregate 710, 454 of them being cases of scabies.

He regarded naphthol as one of the essentially curative ingredients of tar, and used it as a substitute for the latter.

His observations led him at this time to regard naphthol as a very active remedy, and one never to be employed without due caution. He found it of greatest benefit in scabies, a single application in many cases being sufficient to effect a cure. He used in this disease the following formula:

℞. Axung	100	parts.
Saponis viridis	50	"
Naphthol	15	"
Cret. alb. pulv	10	"

After being briskly rubbed in, the patient is powdered with starch and wrapped in flannel blankets.

In prurigo naphthol is highly praised, and it gave good results in ichthyosis and eczema. Engelsted, physician-in-chief to the department of cutaneous and venereal diseases in the Copenhagen city hospital, reported, upon his use of naphthol in 1881, that he found it less reliable than linimentum styracis (bals. styracis liq., 200; ol. oliv., alc., āā 50), linimentum Hebræ, or preparations of tar in general.

He regards a solution (fifteen per cent. in alcohol and water) of naphthol as of great value in psoriasis, but not so sure and prompt as an ointment of chrysarobin. For itching diseases he recommended a one-half per cent. solution in alcohol and water (*Hospitals-Tidende*, 1882). Dr. Paul Sombret ("Thèse de Paris," 1883) speaks favorably of the drug in parasitic diseases and their concomitant eruptions, but found it of no value in psoriasis, and although the pruritus of Hebra's prurigo is rapidly dispelled by it, the curative action was found to be no greater than that of other well-known medicaments.

Dr. Van Harlingen read a paper upon the use of naphthol in skin diseases before the American Dermatological Society, August, 1883, in which he reported that he had found it of great service in scabies, and also of some value in psoriasis. In seborrhœa of the scalp he regarded it as a decided addition to our means of treatment. In his hands, however, it had failed to give relief in hyperidrosis, in which troublesome complaint Kaposi had found it useful. In ringworm its effects, he says, are inferior to almost all of the remedies at present used, and in most cases of tinea versicolor it is almost entirely inefficient.

In pediculosis, up to that time, he had had no personal

experience. In eczema it had failed to give the same beneficial results obtained by Kaposi. He was inclined to predict for it a not unimportant place in dermic therapeutics. Dr. Shoemaker read a paper upon the medical use and value of naphthol before the Philadelphia County Medical Society, October 17, 1883 (*Boston Med. and Surg. Journal*, October, 1883). He had found naphthol of benefit in the treatment of oily conditions of the skin, and that in scabies it fully maintained the claim that Kaposi had made for it. He found it also acted well in psoriasis and chromophytosis, as well as in some of the chronic forms of eczema, lessening infiltration, and especially in squamous and fissured forms of eczema. In fetid exhalations from the feet, bromidrosis, etc., Shoemaker recommends naphthol mixed with talcum, and dusted into the shoes and stockings.

Closely allied substances used in the therapy of the skin are carbolic, benzoic, salicylic, chrysophanic, and pyrogallic acids, many of which have a marked beneficial influence on those diseases in which tar was formerly found to act well. I do not propose to claim for naphthol that it will displace any of these named substances, but that it is in many respects preferable to tar and carbolic acid. At the present day it is an indisputable fact that no drug removes the eruption of psoriasis with the same certainty and celerity as chrysarobin. Pyrogallol acts well in many cases of this disease, as I have found by repeated trials, and has the advantage over chrysarobin of not producing irritation of the surrounding skin and discoloring both skin and clothing. I have notes of several cases of psoriasis in which the application of naphthol collodion has greatly benefited the patient, removing the scales and decreasing the thickened patches after a few applications.

Naphthaline is a substance which has been known to chemistry for some time, but has only recently found a practical application in medicine. It exists as such in coal tar, and is obtained from it by distillation at a high temperature, and occurs as white, glistening crystals. It has an aromatic odor and a burning taste, is soluble in hot alcohol, ether, and benzine, but not in water.

Besides having been recommended and, indeed, quite largely used internally in various intestinal disorders, it has had somewhat of a reputation as a dressing for wounds. When used for this purpose naphthaline should be purified by redistillation. It is said that naphthaline crystals can be better powdered by the addition of boracic acid. It is said to excite granulation in ulcers when applied in the strength of one to four each of alcohol and ether. Naphthaline, when applied to the skin continuously in strong solution, has sometimes been followed by irritation of the urinary passages, and even hæmaturia.

Dr. Lindenbaum (*St. Petersburg Med. Wochensch.*, June 2, 1883) recommends applications of naphthaline in frost-bite, and it has also been praised as a local application in erysipelas.

I show you a specimen of this substance, which was sent to me by a druggist upon an order for naphthol, and I wish to warn you against this error, which may lead you to attribute ill success to the drug when this error is the cause of your failure to secure the results expected. Naphthaline undoubtedly is an excellent drug, but it is not the same thing as naphthol, and does not give the same results, and there is no excuse for its being furnished when naphthol is ordered. My own experience with naphthol has extended over five years, but I have employed it more extensively during the past year than formerly. Indeed, the greater part of the two hundred and eighty cases of which I have record and now report, have been treated during this time, and many of them during the past six months. Some, on which treatment has but recently been commenced, I have not included, and in the neighborhood of one hundred cases of scabies treated in an institution I have also omitted. In these, partly because the nursing facilities could not be thoroughly carried out, and partly, as I now suspect, because naphthaline was being furnished instead of naphthol, as ordered, many of the cases did not improve rapidly, although many, on the other hand, soon recovered. The treatment was abolished, and sulphur baths were substituted to complete the cure.

In institutions, I may say, the treatment of scabies is not always satisfactory where many inmates, as here, are simultaneously affected, for as fast as one is cured he may become reinfected from others or from the bed-clothing, unless proper facilities are afforded for isolation.

I have preserved record of 280 cases in which I have employed naphthol. The diseases were distributed as follows: Eczema, 67; ulcers, 23; scabies, 32; impetigo, 21 (mostly from ped. cap., face, and scalp); pruritus, 10 (1 p. ani, 1 hiemalis, 3 senilis); pityriasis cap., 13 (6 males, 7 females; all more or less associated with alopecia); pityriasis cap., 6 (not associated with alopecia); alopecia premat., 5 (not associated with pityriasis); alopecia areata, 3; pediculi capitis, 12; furunculosis, 8; psoriasis, 7 (1 of scalp; in 2 cases collodion paint was used); ulcerating syphilis, 9 (1 vegetating syph. of nose); dermatitis, 9; pediculi corporis, 5; combustio, 2; epithelioma, 2; ecthyma, 3; acne, 4; tricophytosis, 10 (2 barbæ, 7 cap., 1 corp.); abscessus, 1; œdema and excoriation, 1; prurigo, 2; erysipelas, 1; trauma, 2; intertrigo, 1; favus, 4; sycosis, 3; ecz. marginatum, 2; fissure, 1; herpes, 1; urticaria, 3; pityriasis maculata et circinata, 1; dermatitis exfoliativa, 1; dermatitis squam 1; acne rosacea, 4; total 280.

Eczema.—The 67 cases of eczema represent a variety of forms of the disease. The scaly varieties were found to be those most benefited. In the moist forms the irritation produced by naphthol was too great, unless used in a mild form, as in a starch-paste in strength of from five to fifteen grains to the ounce. The feature of itching was almost always relieved, but the application at first causes smarting if strong. Eczema of the scalp was almost always greatly benefited, and several cases were quickly cured. Internal treatment was usually employed at the same time.

In several cases the use of naphthol was abandoned for tar and zinc, but in almost an equal number, in which tar had produced irritation and aggravated the condition, naphthol was substituted and acted well.

Ulcers.—Old chronic, indolent, and foul ulcers were stimulated by naphthol and usually improved. Syphilitic ulcerations, I found, were more satisfactorily treated by naphthol than by iodoform, and appeared to have the fetor destroyed more effectually, while it assisted the internal treatment in bringing about healing. This was especially noticeable in those extremely foul-smelling syphilitic ulcerations of the scalp.

In scabies, with the exception of a few cases which were seen but once, and the result thus left doubtful, it proved curative in a short time, often after one prescription, and rarely more than two were required. Where the patient can be controlled and the application thoroughly made, it will undoubtedly be found all that has been claimed for it.

Impetigo.—In impetigo and impetiginous eczema, which in most of my cases were associated with pediculi capitis, naphthol ointment gave great satisfaction, and speedily caused a disappearance of the lesions.

Pruritus.—In general idiopathic pruritus, pruritus hiemalis pruritus senilis, and pruritus ani, it invariably acted well, giving quick relief and proving often speedily curative. One patient with an obstinate pruritus ani of many years standing, finds relief from the application of the naphthol soap I have shown. A ten per cent. ointment will cause severe burning if the parts have previously been irritated by scratching, but the burning ceases after a few minutes and the itching frequently does not return for several days. Carbolic acid has been regarded as the great anti-pruritic, but naphthol appears to me quite as efficacious, if not more so, and has advantages over it besides.

Pityriasis capitis.—Dandruff of the scalp, whether associated or not with alopecia, has been without exception cured. (Sometimes, to be sure, relapses are noted, as is the case when other remedies are employed.)

Alopecia, when due to this condition, has in all cases been improved, and in seven of the patients, who were ladies, has been practically cured. There were three cases of alopecia areata in the list treated with naphthol. Two were brothers living together. One made a remarkably rapid recovery while applying daily to the bare spots beta naphthol crystals in substance, rubbing the substance well in with his fingers. The other had obtained, at the time I saw him last, a new crop of fine hairs after using a ten per cent. ointment, having previously had the spots blistered with blistering collodion, and using other stimulating applications. The third case disappeared from observation before the effects of treatment were noted.

In *pediculi capitis* results were always highly satisfactory, the eczema and other changes due to irritation quickly subsiding under the treatment.

In treating *pediculi vestimenti*, or *corporis*, the results were all that could be desired.

In the cases of *furunculosis* mentioned, I used a drachm or half a drachm of naphthol to an ounce of lard or vaseline and avoided poultices. The patients reported that it "drew" well, and in all the cases I shared the satisfaction of the patients. Sulphide of calcium or a tonic was given at the same time, with one or two exceptions.

One case of *carbuncle* upon the neck was likewise treated in this manner, and it gave the patient as little discomfort and healed as quickly and as well without lancing as any I ever treated myself or have seen treated.

Seven cases of *psoriasis* are recorded. One, of the scalp, was cured in a short time. Two now under treatment, in which the collodion is being applied, are doing very well. The patches lose their scales and disappear as quickly as they often do under chrysarobin, without the danger of inflammation of the surrounding skin and the disagreeable feature of staining both skin and clothing.

In *dermatitis* the results have been favorable, but strong applications must not be used.

In *tricophytosis* of the scalp in children I have been pleased with the use of naphthol. In adults where the lesions are upon the skin, and in tricophytosis barbæ, I cannot speak so favorably.

In two cases of papular eczema closely resembling Hebra's prurigo, it acted like a charm. In one, arsenic was given conjointly with it, but the relief from the intense pruritus at least was unmistakably due to the naphthol.

In *favus*, of which there were four cases, its benefit consisted in a removal of the sickening odor and in keeping the heads in good condition in the intervals of more energetic treatment. Its beneficial action was marked and appreciated by the patients themselves. I believe it might prove curative if properly introduced within the hair follicles deep down where the spores have a hiding-place and stronghold.

In *eczema marginatum* and in *urticaria* it appeared to be a valuable application. It has been said to aggravate urticaria, but I have not found it so. In the other affections on the list I do not know that it can be said to have any advantage over hundreds of other local dressings.

Whenever antisepsis is desired, and bacteria or germs are to be destroyed, I believe naphthol has an important rôle to play; it is a valuable detergent and deodorant. In almost all diseases of the scalp it appears to exert an influence for good.

Does naphthol exert any deleterious effects? Under my own personal observation it never has, but I have had reported to me that three patients with scabies in my wards at the Charity Hospital were thoroughly rubbed at the same time with an ointment of naphthol applied to the whole surface of the body. Some hours later they were all seized with symptoms closely resembling those of intoxication from alcohol—singing, shouting, and acting in a dazed and disorderly manner. The house surgeon made the diagnosis of naphthol intoxication, and it was only reported to me after the patients were discharged. The orderly was sure they had had no alcohol, and thought the drug which had been applied had affected them. I have not been able to get a full account of the condition of these men at the time, but hope to obtain a full report from the physician who saw them.

Neisser has reported toxic effects (*Centralblatt für die med. Wissenschaft*, No. 30, 1881).

Kaposi saw a boy suffer from hæmaturia, ischuria, vomiting, unconsciousness, and eclampsia.

Blistering and irritation of the skin have been reported by Squire (*British Med. Journal*, January 14, 1882).

Shoemaker in his valuable paper refers to these reports of poisoning, and gives the results of his experiments to prove the perfect harmlessness of pure odorless naphthol. He experimented on rabbits, and also on medical men who volunteered. Two gentlemen began by taking a quarter of a grain every two hours, and increased the dose, until on the seventh day they were taking five grains at a dose, twice daily, without the least bad effect, and no production of albuminuria. He concludes, then, and his conclusion seems to me highly probable, that the drug used abroad at the time the toxic effects were reported was an impure article, similar, perhaps, to the reddish crystalline mass I have shown to-night.

Be sure, then, the drug you use is pure, and no ill effects need be feared.

Now, a word in conclusion regarding the manner of using naphthol and the various preparations of it.

The mode of applying naphthol most commonly employed by myself has been to order an ointment made with vaseline or lard, containing from five grains to a drachm, rarely more, to the ounce.

I have used lanolin as a base in some instances, but have recently given up its use.

Where a penetrating effect is desired, I have used a salve made in the following proportion:

℞. Naphthol (beta) ..... 5 parts.
Adipis ..... 10 "
Lanolin ..... 85 "
M.

The following paste has given me greater satisfaction than the salve:

℞. Naphthol (beta) ..... gr. v. to xxx.
Pulv. amyli ..... ℥ iij.
Adipis ..... ℥ j.
M. Ft. pastam. Sig.—Apply thickly.

To this oxide of zinc may be added at times with benefit. The fixed dressings with naphthol serve a useful purpose.

Having observed the marked benefit often to be derived from the variously medicated collodia and other fixed dressings, I had a naphthol collodion prepared, and have employed it quite extensively. It acts well in psoriasis, ulcers, tricophytosis, etc..

Mixed with starch powder, talcum, Fuller's earth, or mineral earth, it has given excellent results in moist syphilitic lesions about the anus and scrotum, also in intertrigo, venereal warts, and ulcerations.

I have also mixed the powdered naphthol with boracic acid or oxide of zinc to apply to moist or suppurating surfaces.

Among the various preparations of naphthol we find soaps. In the *Pharmaceutische Rundschau*, October, 1885, Unna has a valuable article on soaps. Among other things, he says that carbolic soap has the least

medicinal value, in his opinion, of all those advocated. The more stable substances—tar, camphor, and naphthol—offer surer success.

Among the soaps he has put forward are a five per cent. naphthol and a five per cent. naphthol and sulphur soap. These are useful where an antiseptic is required for the hands, or for bathing in a great variety of skin diseases. I have found these soaps useful in pruritis and in winter itch.

Aside from the important place I believe naphthol is destined to fill as an antiseptic, I predict for it a place as a remedy in dermatology alongside of tar and many other valuable drugs, rather than as a substitute for them.

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SOME NEW FEATURES IN THE MECHANICAL TREATMENT OF LATERAL ROTARY CURVATURE OF THE SPINE.[1]

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In the treatment of lateral rotary curvature of the spine, the reduction of the deformity by traction should be effected before any other measures are adopted, and although of primary importance, too little emphasis has been placed by orthopedic writers upon this most necessary procedure.

In the erect position of the body, the head and upper extremities constitute a burden, which naturally presses the vertebræ together. As a result of having its constituent vertebræ forced together in the abnormally rotated position characteristic of this deformity, the spine becomes restricted in its movements and locked; and this locking is so firm and unyielding while the burden is borne upon it, that this burden must first be removed by *traction* before other treatment can be thoroughly effective.

It is simply useless to attempt to overcome the abnormal curves by mechanical means, however perfect, without first exercising traction; and the great variety of ingenious braces which have during the history of modern surgery been devised to relieve this deformity, without success, are simply monuments to attest the truth of this statement.

Traction for the relief of lateral rotary curvature may be directed in either of four directions—(1) *horizontal*, (2) *vertical*, (3) *oblique*, or (4) *curved*. The first, or horizontal traction, is the governing principle of the various flat extension couches, which are now happily obsolete; while the second, or vertical traction, is the principle on which is based the practice of suspending the patient in a properly devised sling, and while thus suspended, a plaster-jacket is usually applied to retain the improved position thus secured.

When the patient is suspended, it will be noticed that the abnormal curves have become modified by the traction force of the suspended weight. The vertebræ being thus unlocked and freed from the pressure of the burden (the head and upper extremities), tend to rotate into their normal relations; and if the tone of the muscular system be not too much impaired by long continuance of the deformity, and no absorption changes have been caused in the osseo-ligamentous and cartilaginous structures by pressure, so that when the patient's spine resumes its burden no reappearance of the abnormal curves takes place, no mechanical after-treatment with braces will be necessary.

If, however, the suspension is followed by the resumption of the abnormal curves, *brace-treatment* becomes a positive necessity, and may be either *passive* or *active*.

A *passive brace* simply serves to hold the spine in the position assumed when the brace was applied; while an *active brace*, by means of levers or elastic force, tends in addition to remove the deformity.

After employing suspension or vertical traction to unlock the spine, Sayre advocates the employment of the plaster-jacket as a splint to retain the spine in a correct position, and thus prevent, as far as possible, resumption of abnormal curves.

Now, the *plaster-jacket* is a *passive brace*, and is not actively effective even in this capacity, owing to the fact that it embraces only part of the spine. Especially is this the case where the primary curvature is high, for the jacket in these cases, holding but half of the spine, the latter, being undulatory in its movements, is not encompassed to prevent entire resumption of its abnormal curves when the superincumbent weight is again sustained.

Besides, the plaster-jacket, being passive, encircles the trunk in a rigid frame, which tends to restrict respiration and the proper exercise of the muscles; and thus, when its use has ceased, if there has been no treatment locally applied to the feeble muscles, etc., relapse is sure to follow.

To avoid this and to allow facilities for local treatment, the jacket has been divided anteriorly, which admits its removal for exercise, etc., but once so divided, it does not prevent the resumption of the abnormal curves to the same extent as before; so that, while the suspension—*i.e.*, vertical traction—unlocks the spine, the passive plaster-jacket constitutes a very inefficient agent for permanent cure of the deformity, and should be prescribed if an *active brace* can be obtained.

Fig. 1.—Stillman's Vertical Extension Brace for Lateral Rotary Curvature.

Meeting these difficulties in practice suggested to the writer a plan for overcoming them by means of an active brace, which would exert vertical traction by the use of extension-rods, and in 1881,[1] he read a paper before the Surgical Section of the American Medical Association, illustrating a method for dividing the plaster-jacket into two segments and connecting these segments by extension-rods provided with facilities for motion in various directions, and with elastic cords to assist the weakened muscles and produce oblique elastic tension upon the segments of the brace, and thereby upon a corresponding portion of the trunk and spine—the *idea* being to create an *active* jacket, instead of a passive one, which should produce vertical extension, of course not to the extent produced by suspension, but still to an effective degree, and yet allow exposure of surface for the local treatment indicated (see Fig. 1).

Since that time the vertical extension-jacket has been modified to suit the various forms of the deformity, without, however, changing the essential principles. The stretching has in some cases been made by elastic extension-rods, instead of slotted bars and clamps, or the cog and key; and in some cases the rods have been placed on four sides of the body, instead of two, for increased support.

In some cases, also, when the curvature has been high up, a headpiece has been added to allow vertical extension of the whole vertebral column; but these are all modifications which interest the instrument-maker rather than the surgeon, and do not affect the principles involved.

In this manner an *active splint* was formed, which not only partially retained the effect upon that part of the

[1] Read before the Orthopedic Section of the New York Academy of Medicine at its annual meeting, Friday evening, January 21, 1887.

[1] The writer first established his priority, in the matter of dividing the plaster-jacket, in The Medical Record, 1879.

spine between the segments produced by suspension, but also, so long as it was worn, produced permanent tendencies toward the restoration of the back to its normal condition, without interfering with any measures of a therapeutic or physical nature for the amelioration of the disease.

There is, however, a limit to the efficiency not only of splints founded upon this plan, but also to vertical traction itself.

This is primarily owing to the fact that traction in this direction cannot, in severe cases, bring to bear sufficient *oblique* force to overcome extensive rotation; for the value of vertical traction is limited by the amount of weight which is suspended—this being the active agent in the reduction of the deformity, and in many cases sufficient weight cannot be thus utilized without discomfort to the suspended patient; and if the vertical traction-brace be used in such a case, sufficient stretching of the spine to lift the superincumbent weight from between the segments of the brace cannot be produced without too much infringement upon the soft parts, so that there was still something lacking to complete success.

To supply this need the writer devised the method of *backward oblique traction* in the treatment of this spinal affection (see Fig. 2).

FIG. 2.—Backward Oblique Posture for Reduction of the Deformity in Lateral Rotary Curvature.

This method, as its name indicates, consists in *stretching the spine by traction exerted obliquely backward*, accompanied by *direct pressure against protruding parts*—a feature not possessed by vertical traction, and which tends to reduce the deformity more completely.

To illustrate this principle in detail the patient is placed upon a table in the sitting position, the buttocks being at a distance from its edge corresponding to their distance from the convexity of the dorsal deformity.

The patient then gradually *reclines backward, twisting* at the same time in a direction *opposite* to the twist of the curvature, until the spine is dragged upon by the weight of the head and upper extremities. This, in severe cases, is at first painful, for it tends to exactly *reverse* the abnormal curves. The traction-force is the *burden* which the spine usually bears, and which is the cause of the deformity, so that we have the very weight which, pressing constantly on the spine, causes the deformity, now used as a traction-force to relieve it.

In addition to the *traction*, which from the position assumed by the patient is exerted in an obliquely backward direction, we have *pressure* exerted upon the prominent scapula and ribs by the edge of the table. This is a corrective feature not found in vertical traction, and proves very efficacious.

It may at first seem that such a position as above described would be harsh and painful to the patient, but this is not true, for, practised daily as an exercise, it soon becomes not only tolerable, but grateful to the patient, causing, as it does, the spine to become flexible, and tending to obliterate the deformity more rapidly than any other procedure.

Another method of obtaining this backward oblique traction is to *reverse the process*, allowing the lower extremities to fall over the edge of the table in a position opposite to that of the deformity, this being particularly efficacious in curvatures in which the lumbar region is most involved.

These *postures* should be practised as exercises, and in the less severe cases, accompanied by electricity, gymnastics, etc., the use of the double-bar trapeze, and other adjuncts, is sufficient to correct the deformity without the use of a brace; but if the muscles have become so weakened, or anatomical changes have taken place in the osseo-ligamentous structures, so that the normal curves cannot be retained when the erect posture is assumed, a brace will be found necessary.

This *brace* should be *active*, not passive, and so constructed as to imitate as far as possible the forces exerted in the posture shown in Fig. 2.

FIG. 3.—Illustrating the Curvature when Patient has no Support.

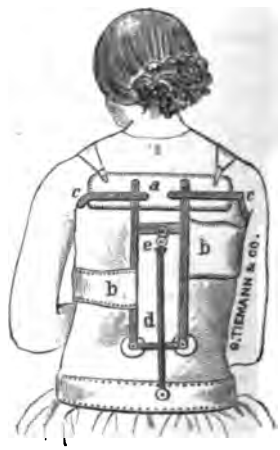

FIG. 4.—Illustrating the Principal Features of Stillman's V-Lever Brace when applied to Patient shown in Fig. 3.

It should insure a *backward oblique traction* and *forward oblique pressure* corresponding to the backward oblique traction-force exerted by the *gravital-force* and the forward oblique pressure occasioned by the *table*.

The brace is made in two parts, and is entirely unlike anything ever before introduced into orthopedic surgery for the treatment of this deformity (see Fig. 4).

A glance at the human skeleton shows that both lumbar and cervical vertebræ move freely upon one another as compared to the *dorsal*, which are restricted in their movements. This dorsal portion of the spine is therefore used as a base for the brace, instead of the pelvis, as in other braces.

The brace is constructed in *three parts*—dorsal, pelvic, and cervical. The *first*, or *dorsal*, consists of a broad pad placed high up across the shoulders, and from this descend two metallic strips, terminating in pads in the lumbar region. From these strips the stiff metallic semi-girths (bb) pass practically around the body, the upper one being over its protbuerant scapula, and the lower one carried around to press upon the protuberant ribs anteriorly.

FIG. 5.—Stillman's V-Lever Brace, combined with Corset (posterior view).

From each side of the transverse pad (a) pass axillary crutches (c,c), terminating anteriorly in large pads which lift and press the shoulders backward without impinging or pressing upon the infraclavicular spaces.

The material of which these crutches are constructed is of sufficient firmness not to yield to the twisting efforts of the patient, although they may be bent into any position by the orthopedist's hands, and they serve a very important purpose in regulating the position of the shoulders and upper extremities.

This dorsal portion of the brace may be incorporated into a corset if desired (see Fig. 5), several of the straps which are used to fasten it firmly to the body being omitted in the drawing, as they might tend to confuse

the reader in understanding the construction of the brace.

The *pelvic* portion of the brace consists of a padded pelvic girth which locks in front, is very stiff, and is attached to the dorsal portion by a long bar (d), which terminates superiorly in my compound clamp (e). This clamp has been described before in various journals, and permits the pelvic portion to be fixed at three different angles with the dorsal, to which it is attached. By it we may exercise a *rotary active* force, *an antero-posterior force*, and a *lateral* force, thus bringing a compound twisting force to bear upon the spine. If the dorsal portion of the brace be *first* securely fastened to the body and the clamp regulated properly, when the pelvic portion is secured, we have the body held hyper-erectly, the protruding scapulæ and ribs pressed upon, and the shoulders squared by an *active backward latero-oblique force* from which the patient cannot escape.

The *cervical* portion is only necessary when the curvature is high, and then a chin-piece is used, attached to the dorsal portion by a bar provided with the compound clamp already described; but this portion of the brace is not shown in the drawing. In applying this brace the patient is first suspended so that the abnormal curves may be reduced as much as possible before its application. It will then tend to retain the favorable position produced by the suspension, and, indeed, improve it by means of the active twisting force it brings to bear.

But the use of a brace alone is but a small portion of the treatment of this curvature. *We must also aim to strengthen the deficient muscles during such time as traction is being exerted upon the spine itself*, and for this purpose the writer has recently devised two frames, which are unique and accomplish the purpose admirably with but little fatigue to the patient.

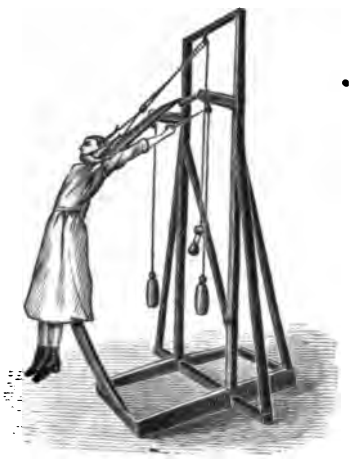

FIG. 6.—Stillman's Vertical Frame for Backward Curved Traction during Exercise.

The first, or vertical, frame (see Fig. 6) produces suspension on the curved board or *curved traction*, and while thus suspended, either partially or wholly, the patient takes arm exercises by means of the weights and pulleys with which the apparatus is provided.

The second, or horizontal, curved frame (see Fig. 7) produced the same results, but perhaps not to the same degree; and their conjoined use not only increases the vitality of the patient by expanding the chest and strengthening the muscles, but tends to diminish the curvature very materially.

FIG. 7.—Stillman's Horizontal Frame for Backward Curved Traction during Exercise.

The horizontal frame is also used by phthisical patients with good effect, and also in cases of persistent backache, with or without spinal irritation.

In conclusion, it is my opinion, based upon many cases of this deformity, that the best results are obtained by the conjoined use of an *active brace* and proper exercise upon curved frames.

A brace alone is of but little use, serving merely to hold the body erectly; but to exert any *curative power it should be made to fit the patient accurately and be readjusted often*, so as to exert its active effects through all the stages of improvement; and, in addition, the patient should be obliged to take systematic exercise, and, if necessary, should receive the benefit of massage, electricity, and other tonics. The diet and habits of life should be regulated carefully, and all work avoided which tends to increase the deformity.

THE PATHOGENIC MICROBE OF "ACUTE CATARRHAL CONJUNCTIVITIS."[1]

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THE form of conjunctivitis to which I call your attention is described under different names by different writers. Thus Travers, Lawrence, Mackenzie, Howard, and others term it catarrhal ophthalmia, Mackenzie giving as synonyms catarrhus oculi, ophthalmia purulenta mitior, and conjunctivitis puro-mucosa catarrhalis. Stellwag, Saemisch, Wells, Williams, Noyes, and others give it the name of catarrhal conjunctivitis. Nettleship calls it muco-purulent catarrh. The severer forms of this disease are termed blennorrhœa, and on the occurrence of certain complications the same disease is known under other names. Howard appears to be the only writer who regards this form of conjunctivitis as a distinctive disease. He writes: "This disease is purely specific, and differs in every respect from all other diseases of the conjunctiva. It never runs into perfect chemosis or induces sloughing of the cornea." Mittendorf describes the milder forms of this affection under the name of "simple inflammation of the conjunctiva."

If we glance at the causes of catarrhal conjunctivitis as given by the various writers, and consider some of the expressions of these writers, we must conclude that under this head a number of distinct diseases are included. The causes briefly are as follows: Atmospheric—sudden changes in the temperature, cold rains, draughts of air, exposure to east or west winds, night air, etc. Mechanical—dust and smoke, foreign bodies, wounds; combustion with steam, lime, powder, acids, etc. Transmission from contiguous tissue—as in facial erysipelas, catarrh of the nasal cavities, dacryocystitis, eczema of lids, hordeoli, pityriasis, etc. Accompanying the eruptive fevers—as scarlet fever, measles, small-pox, etc. Asthenopic—as in astigmatism, hypermetropia, insufficiency of ocular muscles. Work with bad illumination, protracted use of eyes, bright light, violent emotion of the mind, high living, use of ardent spirits, etc.

Contagion as a cause of conjunctivitis is admitted by almost all writers. Saemisch goes so far as to say that all discharges from the conjunctiva are capable of producing conjunctivitis when brought in contact with the normal conjunctiva. Mackenzie, Howard, Wells, Williams, and Noyes consider conjunctivitis to be infectious through the atmosphere, but none hint at a possible bacterial origin. In the mild form of conjunctivitis, usually termed catarrhal, brought on by exposure to cold winds, rain, snow, particles of dust, and larger foreign bodies entering the conjunctival sac, exanthematous fevers, errors of refraction, insufficiencies of ocular muscles, close work with insufficient illumination, high living, etc., there is profuse lachrymation and small secretion of mucus with but few leucocytes, but no pronounced muco-purulent secretion. This form does not run a specific course, but subsides as soon as the cause is removed. It is probably not contagious—at least, we do not see it spreading throughout families and communities. In conjunctivitis resulting from more severe injuries—as from combustion from lime, steam, and powder, laceration of the lids and

[1] Read at the Academy of Medicine before the Section in Ophthalmology and Otology, January 17, 1887.

conjunctiva—if one eye only is affected, even if the discharge is purulent or muco-purulent, the other eye remains unaffected, and there is no spread of the conjunctivitis in the family of the patient. Quarantine precautions are seldom resorted to in these cases, as intact, normal conjunctivæ are not affected by contact with the discharge.

There is another form of conjunctivitis, specific in nature, which, in its early stage, is described under this head. Later it develops into trachoma and is then described as such. It is admitted to be contagious, and is the form in which Michel and others have found a coccus, which Michel asserts to be the cause of the disease in one epidemic at least.

We might mention a number of other forms, more or less distinctive, included under the name of catarrhal conjunctivitis in one or all of their stages, but will close the list with one other form, the one that will be described in this paper. In this the discharge is muco-purulent and is highly contagious. The disease runs a specific course and does not tend to destruction of the cornea or to develop into trachoma. It is the ordinary contagious muco-purulent conjunctivitis met with.

The general signs and symptoms of this form of disease are as follows: During the first twenty-four hours after the receipt of the virus nothing abnormal is noticed. In the second twenty-four hours the following occurs in the order named: Slight itching and burning sensations in the lids, congestion of the palpebral conjunctiva, the sensation as of a foreign body in the eye, sometimes very annoying; increased lachrymation, and a not very profuse secretion of mucus, which contains a few pus-cells. On the third day the above symptoms are aggravated, the ocular conjunctiva becomes injected, and the appearance popularly known as "pink eye" is present. The secretion contains more pus-cells and is much more profuse; the lids are glued together in the morning. The secretion, which generally does not mix with the tears (distinguishing it from the pyorrhoic pus of Stellwag), lies in stringy masses in the conjunctival sac, or is heaped up in harder yellowish masses at the inner canthi, the watery or fluid portion having been carried into the nasal cavities by the canalicular system of the lachrymal apparatus. On the fourth day the inflammation usually reaches its height. Then all the symptoms are more marked. Frontal headache and coryza frequently occur, the former in adults only, and the temperature of the body is usually slightly elevated. But slight photophobia is experienced. This stage may last for a week or ten days, with evening exacerbations, but it usually subsides in from three to five days. Some obscuration of vision occurs from deposits of secretion on the cornea. More or less swelling of the lids is present, and during the latter part of the acute stage considerable swelling of the papillary body is observed. The acute passes into the subacute stage, in which the ocular conjunctiva becomes normal, the secretion less profuse and thicker, lachrymation becomes less than normal, no photophobia is present, and the irritation experienced is less. At this stage the enlargement of the papillary bodies often resembles the so-called follicular conjunctivitis of Saemisch. If not properly treated the subacute passes into the chronic stage, in which there is marked congestion of the palpebral conjunctiva, some secretion, and a sensation of dryness due to insufficient lachrymation. This condition may last indefinitely.

Report of cases.—On March 21st Dr. R. O. Born kindly sent a patient to me who was suffering from acute conjunctivitis, with the request that I should examine the rather profuse muco-purulent discharge microscopically. The patient, Anna F——, aged thirty, first noticed that her eyes were sore three days previous to her visit to me. *Status præsens.* The ocular and palpebral conjunctivæ are greatly congested, lids slightly swollen, quite marked photophobia, profuse lachrymation, and mucorpurulent discharge. A cover-glass preparation of the secretion was made, stained with a watery solution of gentian violet, and examined with a one-twelfth oil immersion. *Large numbers of small bacilli were found.* These were aggregated on and in the pus-cells, and some were free in the mucus. The patient complained of frontal headache and had some coryza. By the use of constant cold applications for three or four days, and the subsequent use of mild astringents, the patient recovered in two weeks from the beginning of the attack.

There were two children in the family, one of twenty months and one of four years, both of whom had sore eyes. These cases had passed into the chronic stage. There was no photophobia, and the children did not appear to be troubled by the scanty discharge. The first had had conjunctivitis for two months. The second was a case of six weeks' standing. In both the palpebral conjunctiva was congested and was discharging muco-pus. The secretion from both cases contained many bacilli, such as were found in the secretion from the mother's eyes. By keeping the eyes clean and the use of a zinc collyrium, both children recovered in one week after treatment was commenced.

In frequent examinations of conjunctival secretions at the Ophthalmic and Aural Institute, for some months previous to March 21st, I had never met with this form of microbe. With a view to determining how frequently cases like the ones described occurred, all the secretions from conjunctival diseases that presented subsequently were examined. The bacillus did not appear again until May 21st, when

Peter C——, aged twenty-three, presented himself for treatment. He was attacked on May 17th, and suffered severely. The pain, irritation, swelling of lids, and profuse muco-purulent discharge made it impossible for him to continue his vocation, which was that of a pedler. He had slept but little since the 17th. By the use of cold applications and astringents he recovered in five or six days, but returned again in three weeks with a fresh attack, as severe as the first, which readily responded to the same treatment. On inquiry I found that his wife, three children, and a servant-girl, still had, or had recovered from, a similar form of conjunctivitis. They were attacked as follows:

Russel C——, aged five. Attacked May 1st, both eyes. Discharge still persists.

Thomas C——, aged two and a half. Attacked May 4th, both eyes. Discharge still persists.

Joseph C——, aged fifteen months. Attacked May 7th, both eyes. Muco-purulent discharge still persists.

Eliza C——, aged twenty-eight. Attacked May 9th, right eye only. Much irritation and pain. Recovered.

Katie O'C——. Attacked May 16th, right eye only. The muco-purulent discharge still persists.

When two eyes were affected the disease appeared in one first, following in the other in from one to three days. The children played and slept together. By cleanliness and the use of a zinc collyrium all the members of this family recovered in a few days.

In order to call attention to the complications that arise in this disease the following cases are given:

May 22d.—Gustave V——, aged one. Attacked May 8th. The ocular and palpebral conjunctivæ are still swollen and congested. Muco-purulent discharge profuse. A *false membrane* covers the tarsal conjunctiva of both upper lids, which when removed leaves minute bleeding-points. The membrane is tenacious and comes off whole. The membrane renewed itself after removal, and in spite of repeated removals persisted for about ten days. The child recovered by the use of cold applications, and a zinc collyrium applied after the membrane had almost disappeared. Other members of the family were affected with muco-purulent conjunctivitis at about the same time, without the formation of false membranes. Specimens of the secretion from all showed the small bacillus.

June 2d.—William F——, aged two. Attacked on May 29th, right eye only. June 4th, left eye discharging

muco-pus. June 7th, a few marginal phlyctænulæ appeared on the right eye. With the same treatment as in the previous cases the patient soon recovered. Other members in the same family had the uncomplicated muco-purulent conjunctivitis.

October 20th.—Clara M——, aged eighteen months. Attacked, October 13th. The muco-purulent discharge has been quite profuse. *Status præsens:* The lids are much swollen but are soft. The discharge, which is muco-purulent, is not very profuse, corneæ clear, a dusky white, tenacious false membrane occupies the tarsal conjunctiva of both upper and lower lids, being very thin and narrow below, wide and about one millimetre in thickness above. The membranes commence at the margins of the lids and cover the tarsal conjunctiva, extending to the fornix above. The membranes, although quite adherent, came off whole by rather vigorous rubbing with the sponge, leaving a number of small bleeding-points. This case resembled diphtheria somewhat, and was entered as such, with an interrogation point, by the receiving surgeon. Cold applications were recommended. October 25th, membrane still present but not so dense; swelling of lids less marked. The membrane disappeared in ten days from the first observation, and the child was well shortly afterward. Corneæ intact. The secretion contained many bacilli.

Microscopical examination in the fresh state showed the membrane to be composed of leucocytes, blood-corpuscles, epithelial and short spindle-cells and débris, all contained in a fine meshwork of fibrin. Bacilli, few in number, were found scattered throughout the mass. Microscopically and macroscopically the membrane resembles that found in the so-called croupous conjunctivitis.

November 1st.—Benjamin B——, aged nine, has had a muco-purulent discharge from the eyes nine days. A false membrane is present in this case, with the same characteristics as the one just described, except that the process is not so severe. Recovery without injury to the corneæ occurred. The membrane was present a little more than one week.

From the fact that in the spring of 1884 the disease was wide-spread throughout the southern part of the New England States, it would appear to be epidemic and transmissible through the atmosphere.

From the following, it appears very probable that this form of conjunctivitis may become endemic:

At the New York Infant Asylum, Mount Vernon, muco-purulent conjunctivitis has affected a large number of the inmates every year, for some years back, beginning about the latter part of August and disappearing in January. In 1885 almost all the inmates, mothers and children, were affected. The disease appeared again in 1886, and although those suffering from the affection were isolated as soon as the discharge showed itself, nearly all of the inmates, to the number of three to four hundred, were attacked. By the courtesy of Dr. Coggeshall, the physician in charge, I visited the wards of the institution on December 20th last, and examined some of the inmates. At that time there were more than one hundred cases of conjunctivitis present, of from two days' to six months' duration. The patients had been treated from the beginning with a one per cent. solution of the nitrate of silver applied twice daily. The average duration of the disease in these cases was about four weeks. Phlyctænulæ had been observed in but very few cases. I saw one case in an adult. Blepharitis ciliaris occurred in a small number. False membranes had been observed in five or six of the severer cases, the membrane usually lasting six or eight days. One of the cases that I saw, that had lasted six months, had had a false membrane. One of the doctors and two of the nurses in attendance had been affected. There was no tendency whatever to development into trachoma. Numerous specimens of the secretion were taken for microscopical examination. All contained the small bacillus in greater or less numbers. In none of the cases occurring at this institution had the cornea been affected.

In one of the institutions for the care of destitute children in this city, I observed, in the early part of June last, ten cases of this form of conjunctivitis. They were isolated, and recovered in a short time by the use of cold and astringents. The disease appeared again among the children in September, and within ten days about forty-five children were affected. These were isolated, and were treated with cold applications and a zinc collyrium. The average duration of the disease in these cases was two weeks. False membrane occurred in two or three cases, phlyctænulæ in two, blepharitis ciliaris in two. There was no tendency to the development of trachoma, and no injury to the cornea in any case.

If this form of conjunctivitis is a specific disease, as I hold it to be, the secretion (selected carefully to prevent external contamination), if introduced into the normal conjunctival sac, should produce this form of conjunctivitis and no other. Saemisch, in speaking of this form, writes that the disease produced by contagion does not always resemble the case from which the secretion is obtained. As is known to be the case in other specific diseases, as scarlet fever, small-pox, etc., there is in this a wide range in the severity of the cases. Within this range the following report of experimental cases will, I think, prove the position taken by Saemisch to be untenable. The experiments were made with the purpose of fixing beyond a doubt the contagious character as well as for the purpose of deciding the specific nature of the disease.

March 22d.—The eyes of two rabbits were inoculated with secretion taken from the first patient. No inflammatory reaction followed.

May 21st.—Inoculated two rabbits' eyes again with fresh secretion. Result as before. No reaction. As the rabbit's conjunctiva was not susceptible to the disease, I determined to inoculate the human conjunctiva of eyes where vision had been lost.

Case I.—May 22d.—J. B——, aged fifty-four. Right, phthisis bulbi; left, old irido-cyclitis. Both eyes were inoculated with a small amount of muco-purulent discharge taken directly from the conjunctival sac of Peter C——. Half an hour before inoculating the eyes the conjunctival sac of the patient had been cleansed with a $\frac{1}{5000}$ solution of sublimate. The eyes were then kept closed until the secretion formed, after which it was transferred to the normal conjunctiva with a sterilized platinum wire.

May 23d.—No change in the appearance of the conjunctiva. No marked symptoms.

May 24th.—Hyperæmia of palpebral conjunctiva; increased lachrymation; some muco-purulent discharge; no pain.

May 25th.—Quite severe pain at night; patient unable to sleep; lids swollen; ocular conjunctiva injected; profuse muco-purulent discharge. The patient was kept from contact with others and no treatment except frequently washing with water was employed, until the end of the second week, at which time the congestion of the ocular conjunctiva had subsided. Thickening of the palpebral conjunctiva remained and the discharge persisted. From this time zinc was used, and the patient recovered in four weeks from the time of inoculation.

Case II.—May 22d.—J. C——, aged fifty-eight. Right eye inoculated as in Case I.

May 24th.—Lids of right eye glued together in the morning; some discharge of muco-pus during the day.

May 25th.—The inflammation is at its height; ocular conjunctiva deeply congested.

May 29th.—The left eye has become affected and is discharging muco-pus. The subsequent conduct of this case corresponds to that of Case I.

In all, the normal conjunctivæ of five sightless eyes were inoculated, in four of which the typical muco-purulent conjunctivitis was produced. The eyes of one patient who was suffering from trachoma were inoculated

The acute form was produced, with the result of benefiting the trachoma.

The bacilli were present in the discharge from all of these cases as long as it lasted.

After a close study of fifteen or twenty cases of this disease I came to the conclusion that it possessed no tendency to destruction of the cornea or to the formation of granulations. Feeling sure of this, I inoculated my own eye in order that I might more carefully study the signs and symptoms. On June 4th at 3.30 P.M. Dr. F. Smith, at my request, placed a small amount of muco-purulent secretion which had been removed from the conjunctival sac of a patient, with a platiffum rod, into the lower conjunctival sac of my left eye.

June 5th.—In the afternoon a very slight burning sensation in the upper lid was experienced.

June 6th.—Slept well. Lids of left eye glued together in the morning (forty hours after the inoculation was made). Ocular and palpebral conjunctivæ congested; lids feel a little stiff and swollen; no chemosis. The discharge of muco-pus was very little until after noon, when it became quite profuse. At 9 P.M. the irritation became so intense that cold applications, by means of iced cloths, were resorted to. This was kept up until twelve o'clock.

June 7th.—The eyelids do not feel as sore as they did last evening; discharge profuse. The painful sensations and the quantity of the discharge increased toward evening. Temperature, 100° F.; pulse accelerated; some frontal headache. Cold applications, commencing at 5 P.M. and continued until 11 P.M.

June 8th.—Was a repetition of June 7th.

June 9th.—Cold applications all day and late into the night.

June 10th.—Eye much better; cold applications discontinued.

June 11th.—Eye much worse; stiffness of lids; irritation and discharge increased. Hypertrophy of the papillary bodies above and below. Ice-applications far into the night.

June 13th.—Eyelids painful, but less secretion. Ice-applications in the evening. As the lids became glued together often, I rubbed their margins with vaseline combined with the yellow oxide of mercury, one-half per cent.

June 15th.—Eye much better. Ice-applications discontinued.

June 19th.—Ocular conjunctiva almost white; lids glued together in the morning. Papillary bodies swollen.

July 4th.—No secretion for some days, but a dryness of the lids, from insufficient lachrymation, becomes very annoying whenever an attempt is made to read or use the eyes for close work, by insufficient illumination. In about six weeks from the time of the inoculation the eye was in a normal condition, not a trace of the inflammatory action remaining.

The bacilli were present in the secretion as long as it persisted, but they were vastly reduced in number after the cold applications had been made two days.

"*Cultivation.*—By the kind assistance of Dr. T. Mitchell Prudden, attempts were made to cultivate the small bacillus on agar and gelatine in tubes and on plates from secretion from the first case and from the case of Peter C——, without success. Peter C—— went to the laboratory and the secretion was transferred directly from the conjunctival sac (after having thoroughly cleansed the sac and permitted fresh secretion to form) to the tubes and plates. Although the conditions were made as favorable as possible, the *bacillus did not develop.* On particles of pus transferred to the tubes and kept in the breeding oven, at a temperature of about 36° C., the bacillus developed, but it could not be induced to feed on the agar or gelatine."

Subsequent investigations were carried on at the Ophthalmic and Aural Institute with apparatus that Dr. Knapp kindly placed at my disposal.

An endeavor was made to render the agar, which was a one per cent. preparation, acceptable to the bacillus by the addition of a little sugar, in some tubes, increasing its alkalinity in others, and by making it more acid in others, *without success.* I did not experiment further with the gelatine, which was a ten per cent. preparation. Conceiving the idea that possibly the agar was the objectionable factor, a food jelly which contained only about 0.5 per cent. of agar was prepared. The *bacillus developed* rather feebly in this preparation in tubes, but would not grow on plates. Having found a medium on which the bacillus would develop, although feebly, my next endeavor was to make a *pure culture.* The bacillus in the tubes was contaminated with a club-shaped bacillus (or one that soon became clubbed) which developed about as rapidly as the small bacillus, and repeated attempts to separate the two proved fruitless. It was very easy to obtain a *pure culture* of the *clubbed* bacillus, as it grows, quite readily, on one per cent. agar and on ten per cent. gelatine. Very many attempts were made to obtain a pure culture of the small bacillus by employing the plate method. The same medium on which the bacillus would grow in tubes would not support it on plates. An attempt was made to produce a pure culture by inoculating many tubes from an attenuation of the mixture, in "normal saline solution," without success. In the one-third to one-half per cent. agar in tubes the bacillus, with its contamination, was carried to the *sixteenth generation.* Repeated attempts have been made to cultivate the small bacillus on coagulated, sterilized blood-serum, but all these have failed to carry it beyond the second generation. It develops in beef-tea.

Its development on agar is as follows: But little or no growth can be observed during the first twenty-four hours. At the end of forty-eight hours a slight haziness appears along the tract of the needle, and on the surface of the agar a very small patch is noticeable; this is of a pearly color and possesses a glistening surface. By the formation of concentric colonies the growth extends for a short distance from the point of puncture on the surface of the agar. The growth reaches its height in from five to seven days, at which time the above-described appearances are but slightly exaggerated. The bacillus then gradually degenerates, breaking up into small particles which take the stain poorly. I have not seen the well-formed bacillus in any tube-growth later than *one month* after the tube was inoculated, when the tube was kept at a temperature of 36° C. The club-shaped bacillus retains its form and vitality much longer. The 0.5 per cent. agar is the best medium that I have found on which to cultivate the small bacillus; it leaves, however, much to be desired which further experiments will probably satisfy.

The method of inoculating tubes with the secretion has been to thoroughly cleanse the conjunctival sac with clean water and cotton, direct the patient to keep the eyes closed, and, after five or ten minutes, to transfer a small portion of the newly formed secretion from the bottom of the lower conjunctival sac to the tube, using a previously heated platinum rod for the purpose. An even temperature from 34° to 38° C. is most favorable for the development of this microbe; it is also necessary to have abundant moisture. I have never succeeded in making a cultivation of this bacillus below a temperature of 30° C., nor on agar from which the water was in part removed.

Description.—The bacillus varies considerably in length, being from one to two micro-millimetres long; in thickness it is always the same, namely, about 0.25 of a micro-millimetre. Compared with the tubercle bacillus, it is of about the same thickness, but is shorter. In specimens from cultures on agar I have observed a number of the bacilli joined end to end, forming quite long threads (6 to 12 together), the division between individual bacilli being very indistinctly marked. There was no tendency to a double arrangement, as in bacillus subtilis.

The formation of spores is not determined. The small bacillus stains readily with watery solutions of fuchsin, gentian violet and methylene blue, taking the stain a little less deeply than do the cocci and bacilli ordinarily met with. When the bacillus commences to dengenerate it stains much less readily. It does not stain well with Bismarck brown, ammonium, or picro-carmine, or with hæmatoxylin. Attempts at double-staining have, so far, proved unsatisfactory. In staining sections of the conjunctiva, Gram's method with gentian violet has given the best results. I find nothing peculiar to this bacillus in the effect produced upon it by the various acids, alkalies, alcohol, chloroform, or ether. In strong nitric or sulphuric acid the bacillus is soon destroyed. If colored with gentian violet or fuchsin, the bacillus is quickly decolorized when treated with alcohol or a ten per cent. solution of either nitric, acetic, hydrochloric, or sulphuric acid; taking the color again readily after the decolorizing agent is removed by washing with water.

Inoculation experiments.—Not having succeeded in making a pure cultivation of the small bacillus, pure cultures of the clubbed bacillus were made, and experiments conducted with this and with the mixture.

Experiments with the clubbed bacillus.—No. 1. The right eyes of two rabbits were inoculated by placing some of the pure culture into the lower conjunctival sac. Absolutely no inflammatory reaction occurred.

No. 2. The eyes of two rabbits were inoculated by introducing the bacillus into the anterior chamber, after piercing the cornea with a cataract-knife which had previously been dipped in a thick emulsion of the germs. The wounds healed without inflammatory action. The human conjunctiva was then tried.

Case I.—July 10th.—T. B——, aged twenty. Right eye inoculated by placing a small amount of the pure cultivation (seventh generation) in the conjunctival sac. The patient was under observation one week. *No reaction.*

Case II.—July 10th.—I. M——, aged forty-two. Right eye inoculated as in case No. 1. No reaction.

Case III.—August 8th.—D. L——, aged six. As in case No. 1. No reaction.

Case IV.—August 8th.—S. G——, aged six and a half. As in case No. 1. No reaction.

Case V.—August 13th.—W. W——, aged seven. As in case No. 1., with sixth generation. No reaction.

The above five inoculations of the human conjunctiva and four of rabbits are sufficient to prove the innocence of the clubbed bacillus in the production of acute conjunctivitis and in the formation of pus.

Experiments with the mixture of the small and club-shaped bacilli.—In these cultivations the small bacillus largely predominated.

Case I.—July 29th.—M. I——, aged six. Right eye inoculated from a *fifth generation*, proceeding as above.

July 31st.—The ocular and palpebral conjunctivæ of the *inoculated eye* are markedly congested, and are secreting a small amount of muco-pus; profuse lachrymation; no photophobia, and but slight pain. Left eye normal.

August 2d.—The congestion of the ocular and of the palpebral conjunctivæ of the right eye is very intense. Profuse discharge of muco-pus, which collects at the inner canthi, escaping over the cheek at this point. Lachrymation, slight photophobia, some pain in the lids, and mild coryza. The *left eye* is becoming injected, probably having been inoculated with the discharge from the right eye.

August 4th.—Both eyes present a typical picture of acute conjunctivitis, with intense congestion and slight swelling of the ocular and palpebral conjunctivæ. Chemosis not present; swelling of lids marked. Continuous cold applications were ordered.

August 8th.—The ocular conjunctiva is becoming white. The discharge still continues, but is less in quantity and is thicker.

August 10th.—Still greater diminution in the congestion of the conjunctiva and in the amount of the discharge. A zinc collyrium was ordered.

August 16th.—Ocular conjunctivæ white; palpebral still congested. Thick yellow masses of the secretion form at the inner canthi—an appearance quite characteristic of this disease. No photophobia, and but slight pain.

August 30th.—Still a very little secretion. Conjunctiva almost normal.

The patient had entirely recovered on September 1st.

Case II.—July 29th.—S. D——, aged seven. Right eye inoculated from a *fourth generation.* The disease ran a course exactly like that in Case I., except that nine days after the inoculation numerous sub-conjunctival hemorrhages in the ocular conjunctiva occurred. The discharge ceased about August 28th.

Case III.—July 29th.—A. S——, aged six. Right eye inoculated, as in the two previous cases, from a *fifth generation.* This case was like the two preceding, except that it was milder. Recovery took place three weeks from the time of the inoculation.

Case IV.—July 29th.—F. F——, aged six. This case was in every respect a repetition of the previous case.

Case V.—September 1st.—M. T——, aged thirteen. The inoculation in this case was made from the *eleventh generation* of the small bacillus. A typical conjunctivitis appeared on the second day, and ran a course as in Case III. of this series, except that on the fifth day a very few marginal phlyctænulæ appeared.

Case VI.—September 1st.—J. A——, aged ten. Right eye inoculated from the *eleventh generation.* The typical conjunctivitis appeared as in Case III., running a somewhat more protracted course.

Preparations of the secretion, for the microscope, were made from time to time. *The bacillus was present in all as long as the yellowish discharge persisted.* Sections of the conjunctiva from three of the cases, obtained by cutting out small portions from the bottom of the lower conjunctival sacs, were examined microscopically after staining by Gram's method. The bacilli, in rather scanty numbers, were found in the anterior layers of the epithelium, either singly or in groups, lying between the cells. Some leucocytes or pus-cells, found in the epithelial layer, showed the bacilli apparently in the interior as well as on the surface of the cells. Cultivation from the secretion from all of these induced cases were made which corresponded in appearance to the original culture.

No corneal complications have occurred in any of the two hundred and fifty to three hundred cases that I have observed. The cornea is affected but seldom if ever in this form of conjunctivitis, unless it is complicated by some intercurrent disease. In Case V. a few phlyctænulæ appeared on the fifth day. This I consider to be the development of a distinctly different disease ingrafted on the older conjunctivitis—an accidental complication. Pyogenic germs, as the staphylococcus, which in the *normal* conjunctival sac are innocuous, and which are probably the cause of phlyctænulæ, undoubtedly find easy entrance to the deeper epithelial layers in the roughened condition of the epithelium due to the former inflammatory action. It will be noticed that in the last six cases described the inflammation in the inoculated eye (O. D. in all) appeared uniformly in about forty-eight hours from the time that the bacilli were introduced. In order to produce this effect there certainly must have been some causative agent in the cultures employed.

Care was taken not to convey any of the original secretion from the first tube to tubes in which the subsequent generations were produced; certainly the fifth, sixth, and eleventh generations were too far removed from the first to admit of the possibility of such an accident. Had it been a simple chemical irritant to the conjunctiva we would have expected to see an immediate inflammatory result, as occurs after the introduction of quick-lime, acids, strong solutions of the nitrate of silver, etc. As it was, no redness of the conjunctiva, no sense of

discomfort, or anything outside of the normal condition was experienced by the patient until thirty-six to forty-eight hours after the inoculation. A period of incubation was necessary to enable the bacilli to multiply sufficiently to produce an inflammatory condition of the mucous membrane.

The researches of numerous observers have demonstrated the fact that quite a large variety of microbes are found in the conjunctival sac. I have myself cultivated four forms of bacilli and six varieties of cocci from conjunctival sacs which were normal or but slightly congested. These, of course, do not include the coccus of Neiser, nor the one recently described by Michel as the causative agent in trachoma. The bacilli of which pure cultures were made were as follows:

1. The clubbed form of which I have spoken.
2. That described by Leber and others as always present in the secretion in xerosis of the conjunctiva.
3. A short, thick bacillus very common in normal conjunctivæ.
4. The bacillus subtilis, or one resembling it very closely.

The following varieties of cocci were found:

1. Staphylococcus pyogenes aureus (Rosenbach).
2. Staphylococcus pyogenes citreus.
3. Staphylococcus pyogenes albus.
4. A large coccus about one and one-half times the diameter of the staphylococcus.
5. One form of the streptococcus.
6. Micrococcus cinnabarens.

The bacilli are met with most frequently in the following order: The short, thick bacillus; the clubbed bacillus; Leber's bacillus and the bacillus resembling the bacillus subtilis. The cocci: Staphylococcus aureus, albus, and citreus; streptococcus, one form; micrococcus cinnabarens; the large coccus.

Experiments were made with all of these varieties, except the streptococcus, to show their innocence in producing conjunctivitis by placing small amounts of the pure culture into the normal conjunctival sac. Rabbits were first used, but as no inflammatory result occurred the human conjunctiva was employed. This method of inoculation produced no effect whatever, although tried repeatedly. The different forms were introduced into the corneal tissue and into the anterior chamber of rabbits' eyes, by means of infected instruments and by using the platinum rod. Of the bacilli, Leber's produced an opacity of the cornea in the immediate vicinity of the wound, which cleared up in a few days. The different forms of staphylococcus invariably produced either corneal abcess if introduced into the corneal tissue, or panophthalmitis if well introduced into the anterior chamber. All the other varieties, except the streptococcus, which was not experimented with, were perfectly innocent in wounds of the cornea or when introduced into the anterior chamber.

All of these microbes, except the very small bacillus, grow on ordinary ten per cent. gelatine and on the ordinary agar food preparation.

"In numerous examinations of secretion from the normal conjunctiva and from the conjunctiva in all its phases of disease, I have never met with this small bacillus except in the form of acute conjunctivitis described; in this disease its occurrence is *constant*." A short time ago Dr. H. Knapp showed me some specimens of microbes, obtained from the deposits about the teeth in one case, and from a corneal ulcer in another, which in form resembled the small bacillus that I have described. No cultivations or experiments to ascertain their character were instituted.

The diagnosis of this disease is not difficult, even without the microscope, if a few cases have been recognized and examined. The discharge is muco-purulent, does not mix with the tears except in very severe cases, and has a tendency to form in light-yellow masses at the inner canthi. The flushing of the ocular conjunctiva, without chemosis or very marked pericorneal injection, is present in its acute stage. There is usually but little photophobia. The absence of marked chemosis and great swelling of the lids is sufficient in most cases to distinguish it from diphtheria and gonorrhœa, but in some cases where a false membrane is present, and in others where the discharge is more puriform, the microscope must be employed to arrive at a correct diagnosis.

The complications that may arise in this form of conjunctivitis are blepharitis ciliaris, phlyctænulæ, false membranes, and possibly trachoma and corneal ulcer—all of which, with the possible exception of the false membrane, being due to the addition of another *germ* factor.

Blepharitis ciliaris makes its appearance, in the cases which it complicates, in from one to three weeks after the commencement of the attack, and sometimes persists long after the original inflammation has subsided. Phlyctænulæ occur in a small proportion of the cases. The false membranes have occurred in six cases that I have observed. In these cases the membrane was quite persistent, lasting in one case more than two weeks; in another, eight to ten days, etc. They appear in cases where the bacilli are numerous, where proper cleanliness is not observed, and where the hygienic surroundings are bad. The condition is one resembling the so-called croupous conjunctivitis described by Mackenzie, Saemisch, Knapp, Noyes, Manz, and others, and is, I am inclined to believe, identical; the severity of the cases described by Knapp and Manz probably being due to personal peculiarities, as hyperinosis or cachexia. Papillary excrescences in the fornix conjunctivæ I have not observed, but papillary enlargements, with thickening of the conjunctiva at the fornix, are of frequent occurrence. This disease must not be confounded with the vernal catarrh of Haynes, Walton, Nettleship, and others, the Frühjahrskatarrh of Saemisch and Standke, as it in no way resembles that affection. Relapses are not infrequent, and having once had the affection does not protect the patient from a subsequent attack. The disease may affect the conjunctiva when trachoma or blepharitis ciliaris is present, and possibly when other chronic inflammatory processes are in progress. It runs the usual course in these cases. The trachoma in the three cases that I have watched was much improved when the muco-purulent conjunctivitis had subsided. In one case, that of a nurse who had infected her right eye while cleansing the eyes of a child who was suffering with muco-purulent conjunctivitis, the disease was permitted to run its course, except that the very severe symptoms were modified by making cold applications to the lids. The left eye was treated with sulphate of copper. At the end of five weeks, at which time the acute conjunctivitis had subsided, the infected eye was in much better condition, so far as the trachoma was concerned, than the other; in fact, the granulations had almost entirely disappeared, while the cornea, which before was quite hazy, became quite clear. It is not improbable that the secretion from this form of conjunctivitis, and cultivations of the bacillus, may become valuable agents in the treatment of trachoma with or without panus, the absence of any tendency to attack the cornea or cause any loss of tissue rendering it a safe agent to employ. Repeated inflammations may be produced at pleasure.

This form of conjunctival disease is most plentiful in the spring and fall months, but isolated cases are met with at all times of the year. It attacks young and old, being more severe in adults than in children.

The observations and experimental results given above, notwithstanding the defect in its cultivation, are, I believe, sufficient to establish the causative effect of the small bacillus in this form of conjunctivitis. The difficulty experienced in cultivating this microbe on artificially prepared food is not unprecedented. Many, in fact the greater number, of known pathogenic varieties are cultivated with difficulty, and some are problematical in this

respect. What the relation is, if any, between the club-shapped and the small bacillus I am not prepared to say. In cultivations that apparently consisted of small bacilli only in the first and second tubes, subsequent inoculations either did not develop or developed in company with the clubbed variety. I do not think that the clubbed variety is a form of the small bacillus in one phase of its development, as I have never observed any transition forms and as I have cultivated the clubbed bacillus from the normal conjunctival sac, the small bacillus, of course, not being present.

"So far as I am aware, no one has heretofore described a microbe as the cause of this form of acute conjunctivitis. Koch (*Wiener Med. Woch.*, 83, p. 1,550), while at Alexandria, Egypt, investigating the cholera epidemic, examined the secretion from fifty cases of conjunctivitis, which included two forms. One of the forms of conjunctivitis, which runs a very severe course, he asserts to be due to the presence of a bacterium which closely resembles the gonococcus and is probably identical with it; the other a very much less severe process, in which a constant condition was the presence of a very small bacillus in the pus-corpuscles. The latter is probably the same form that I have described. Dr. Haensell (*Bulletin Clin. Nat. Oph.*, January and March, 1886, p. 7) mentions having observed a microbe peculiar to acute conjunctivitis, but refrains from describing it, as he has made no cultivations or experiments with it."

In view of the above, and of the ambiguity of the term "catarrhal conjunctivitis," I would suggest the term acute contagious conjunctivitis for this form of disease.

Treatment.—Thorough isolation is the first thing to be resorted to, especially when the disease appears in asylums or residental schools, as it is very contagious. A glance at the long list of remedies advocated by the various writers is enough to show that no specific remedy is recognized. Given a specific cause, we may hope to find a specific remedy. Patients suffering from a disease due to the presence of a germ would probably recover rapidly if a germicidal remedy could be brought in contact with the germ without detriment to the tissue. Usually the germ is so deep in the tissue that applications to the surface cannot reach them; hence the inability to abort gonorrhœa, after the inflammatory stage is well established, by applications of strong solutions of the nitrate of silver, or to stop the progress of diphtheria by the local applications of strong solutions of the bichloride of mercury, although these agents would destroy the specific germs if brought in contact with them. If we cannot reach the germ with a remedy applied to the surface, is it not possible to place the tissue in such a condition that the development of the germ will cease, or be much retarded, without interfering with the vitality of the tissue or with cell-change, sufficient to prevent expulsion of the germ in a comparatively short time? This condition, in many cases, may be produced, I think, by reducing the temperature of the tissue below the point at which the microbe will develop. Many pathogenic microbes require a temperature above 30° C. for their development; this is the case with our small bacillus. If we reduce the temperature of the conjunctiva to 30° or 32° C. we retard the development of the microbe, but do not prevent cell-change. Can this be done? The temperature of the normal conjunctival sac is 97½° F. By *actual experimentation*, I find that the temperature of the conjunctival sac may be reduced to 30° C., providing the lids are but little swollen, by the simple application of iced cloths, and can be easily kept at that temperature without discomfort to the patient. *In the acute stage, cold applications are always grateful to the patient.* Pressure on the lids should be avoided, as this interferes with the vitality of the tissues. The applications should be made with small square pieces of linen, in two or three thicknesses, large enough to cover the lids nicely. Twelve or fifteen of these pieces should be placed on a block of ice and changed to the eye every minute; except frequent cleansing with clean water, to keep the eyes free from the secretion, nothing else is needed for from two to four days. If the applications are made carefully and constantly the acute stage usually subsides in two days. The succulent or lax condition of the conjunctiva, then, requires the use of some mild astringent solution, as of zinc sulphate or the nitrate of silver, applied twice or three times daily.

The above appears to be a rational method for the treatment of this disease, and in practice it proves to be most efficacious.

The average duration of fifty cases by this method of treatment was *two weeks.* In more than one hundred cases where the nitrate of silver solution, one to two per cent., was applied twice daily from the commencement of the discharge, the average duration was about *four weeks.*

NOTE.—The passages in quotation marks are extracts from a paper published by the writer in the Arch. of Ophthalmology, vol. xv., No. 4, 1886.

MELANOSIS OF THE URINARY TRACT.

BY ALEXANDER W. STEIN, M.D.,

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MELANOSIS of the bladder is extremely rare in man, and in the few isolated cases, incompletely recorded, other organs were simultaneously involved. The distribution of the pigment in the present case was so general and so extensive as to make it almost unique. It should be noted that this disease is not at all infrequent in some of the domestic animals, notably the horse. In gray and white horses it occurs quite commonly. In them it remains stationary for an indefinite period, and then manifests a disposition to ulceration; but the disease is always tardy in its progress, and I am told the animals rarely, if ever, die in consequence of it. Scarcely anything is known of the clinical features of these deposits, except their tendency to multiplicity, which is remarkable. They have little influence over the vitality and function of the part in which they are found. Where an impairment of function exists, it must, as a rule, be attributed to the causes which have given rise to the formation of the pigment, and not to the deposit itself, unless the latter accumulates in sufficient quantity to interfere, mechanically, with the functional activity of the part, as it not infrequently does in the horse, necessitating removal of the tumor. In the present instance the disease existed in the kidneys, bladder, prostate, corpus spongiosum, corpora cavernosa, and all the principal organs in the body; but how long they were affected it is impossible to say, as the disease did not manifest itself by any symptom during life. About nine months had elapsed from the first external sign until death. Melanotic sarcoma, or carcinoma, are simply growths, with the well-known characteristic structure of these tumors, in which pigment-granules are deposited in such quantity as to make them appear black or brownish-black in color, and this, as in the benignant form of the deposit, is the result of certain changes in the blood-vessels, or in the circulation, in which the coloring matter of the blood escapes and is converted into pigment;

but what these changes are we do not as yet understand. Patients suffering from this disease sometimes pass black colored urine, even when the kidney-substance is not affected.

As in neither of the standard works on diseases of the bladder is there any mention made of this malady, I have transcribed this history, with the autopsy from the hospital records, to which I have added an engraving of the bladder and urethra :

Man, aged thirty-three, German, married, cabinet-maker, vaccinated in infancy. Has several scars, one of them very well marked. Has never had small-pox before, or other exanthematous fever. Cannot say when he was exposed. Has been delirious for some time; how long cannot be ascertained, nor, consequently, any history of the invasion of the disease. He was brought in on the evening of December 13th, violently delirious, requiring restraint; he was given two grains of quinine every hour, and slept well after a while, and this morning, the 14th, is apparently entirely rational. There is an eruption, apparently four days old, of thinly scattered small umbilicated vesicles all over the body. Feels pretty well now, appetite good, slightly constipated, tongue a little furred, considerable conjunctivitis, much thirst, but pulse is good. Ordered to grease the face and take two grains of quinine three times a day.

December 17th.—Pretty weak to-day; pulse, 114. Throat quite sore; is to gargle with chlorate of potash.

December 18th.—Complains more of throat and tongue, which latter is much ulcerated. Pulse good, but says he feels feeble.

December 20th.—Eruption has run a most rapid and rather incomplete course, and has now dried up. Complains of diarrhœa, which he has had some days, and which was stopped promptly by powders of acid tannic, subnitrate of bismuth, opium, camphor, and creta præparata.

December 21st.—Eruption all gone.

December 22d.—To-day a history was taken of what appears to be a case of melanosis. This eruption began last Easter; it was first noticed as a little hard knot in the cartilage of the ear, immediately followed by a number of similar knots on the back, and in a little more than a month the whole surface of the body became invaded with innumerable hard lumps of variable size, from that of a duck-shot to that of a large hickory-nut.

These lumps first appear as small knots under the skin, increase in size, approach the surface, become ulcerated, assume an almost black-purple color, with a thin, shining cuticle, and then desquamate; the scab being moist, leaving at first a moist, purplish surface, and afterward an ordinary red surface, such as that left by any small healing ulcer after the scab has come off, and eventually healing, leaving no scar, only a slight hardness in the integument, to mark its former site. About nine weeks ago the entire skin began to assume a grayish-bronze color and a slightly greasy character. At present there is a horrible, heavy, and altogether indescribable odor emanating from his body. Can't say how long this odor has been about him. In the mouth there is an eruption similar to that on the rest of the body. It has been there about seven weeks. After he came in he had a diarrhœa for six days, but that was controlled by a single dose of bismuth, tannic acid, opium, and chalk. He has no vomiting.

Before this eruption came out he had perfectly good health, but from the beginning of this he began gradually to emaciate and lose strength, and is now much reduced in flesh and power. Seven weeks ago he grew so weak that he had to take to his bed.

He makes no complaint of pain. It is worthy of remark that the small-pox pustules with which he has just been attacked have appeared indiscriminately upon these black papulæ as well as on the sound skin. He says his family who are living are all perfectly healthy, that his father died of dropsy and his mother of cancer of the stomach.

January 12th.—Has been growing steadily weaker for the past three weeks. During the two days past he has been having involuntary evacuation.

January 14th.—Died last night.

Autopsy, thirty-six hours after death. No rigor mortis. Body below medium size, thin, but not extremely emaciated. Color of skin, dark; upon face and neck, almost olive. Whole surface of body spotted with black tumors, varying from the size of the head of a pin to a half-dollar, generally rounded in shape, projecting perhaps one-eighth inch above surface; smaller upon upper extremities, smallest upon neck and face, largest upon trunk. These tumors (very small) were to be observed on the conjunctiva; not upon the scalp, nor in or under the nails. Head: Black tumors in substance and on both surfaces of dura mater, those on the outer surface following course of vessels; also in falx cerebri. Inner surface of calvarium covered with pigment-spots corresponding to tumors in dura mater. Arachnoid covering convex surface of brain thickened and opaque, generally along course of vessels and in spots; melanotic tumors in substance of brain generally small, larger upon surface; also upon surface of lateral ventricles. Thorax: Pleura, both parietal and visceral, studded with small black masses; also the pericardium. Heart: Weighed fourteen ounces. Walls of left ventricle very thick. External surface covered with pigmented spots, some projecting, some not. In substance of heart the pigment seemed to follow course of muscular fibre. The columnæ carneæ, as well as all the internal surface of the organ, were mottled with the same masses, but not the valves nor the aorta or pulmonary artery. Lungs: Old adhesions on right side; a few small cicatrices at apex of left lung. Lower lobe of right lung in first stage of pneumonia. Both lungs infiltrated with pigment-matter throughout. Mucous surfaces of larger bronchial tubes containing spots of pigment. Bronchial glands enlarged and black. Diaphragm, containing the melanotic tumors on both surfaces and in substance. Abdomen: The peritoneum, both visceral and parietal, and the omentum and the stomach and the intestines, large and small, and the pancreas and the mesenteric glands, were also invaded and enlarged. Spleen: Six ounces, firm, and dark in color. Liver: Three pounds nine ounces, dark in color, containing many small tumors, especially near surface and in the thin portions; one large one in the right lobe, size of walnut, extending three-fourths of an inch into substance, softer internally than on surface. Kidneys: Left, three ounces; right, seven and one-half ounces. Pelvis, especially that of the left, spotted with the little black tumors; substance, especially the cortical portion, much pigmented; pyramidal portion comparatively free. Bladder and urethra: Internal surface studded with melanotic tumors (small); a few in substance of corpus spongiosum and corpora cavernosa and the prostate. The tumors present also in the testicles and tissues of the cord. The muscles throughout the body, wherever examined (neck, chest, abdomen, back, thigh, lower extremities, etc.), were infiltrated with the same black pigment, which followed, to a marked extent, the course of the muscular bundles. Muscles pale and flabby.

TRACHEOTOMY AT THE HAMBURG GENERAL HOSPITAL.—In the year 1886 there were 219 tracheotomies done in the hospital, of which number 151 died, making a mortality rate of about sixty-nine per cent. In January and February of this year there were 48 tracheotomies done for diphtheria, of which number 34 died, a mortality rate of about seventy per cent.; but it should be mentioned that the endemic of diphtheria which at present prevails here is of a very severe type. The after-treatment of tracheotomies consists in keeping the atmosphere of the room saturated with salicylic acid spray, produced by steam atomizers.—*Cor. Cincinnati Lancet and Clinic.*

Clinical Department.

LOBELIA AS A REMEDY IN ASTHMA.

Dr. J. S. Prettyman, Jr., of Milford, Del., writes: "The result of this isolated case of asthma accords with my past experience in the use of lobelia as a remedy. On April 15th I was called to visit G. W——, aged seventy. Found him exceedingly nervous, supposing himself to be dying. His heart was depressed, and he was struggling for breath, with the sweat rolling from his person. I diagnosed spasmodic asthma and ordered half an ounce of compound tincture of lobelia in half a glass of hot water. There was no occasion for repeating the dosé, as he was entirely relieved in fifteen minutes, and slept the rest of the night without recurrence of attack. During his course of lectures four years ago, at the University of Pennsylvania, Dr. H. C. Wood said that this drug (lobelia) was more dangerous than veratrum viride, and advised against its use. To indicate the absurdity of his position, before retiring that night I swallowed and retained half an ounce of the simple tincture in presence of several of my classmates. I slept well and in the morning was in my usual good health. I have frequently used this drug, not only in asthma, but in almost every form of inflammatory and febrile disease, and have yet to meet with a single case of the so called alarming symptoms."

TYPHOID FEVER AND CONTAGION.

Dr. G. W. Robinson, of Trinidad, Col., takes exception to a statement in a recent article by Dr. Benjamin, that typhoid fever can arise only by contagion from a preceding case of the disease. He writes: "Trinidad is located in the foot-hills of the Rocky Mountains, at an elevation of about six thousand feet. Part of the water-supply is obtained from a well on the edge of the river, covered by the sand and gravel of the river-bed. The water is pumped into a reservoir situated on a hill several hundred feet above the town. Another source of supply is a well about a hundred feet from the river, and quite a distance from any houses or out-buildings. There are, in addition, a few wells in the city. The river is a rapid mountain-stream, pure and sweet, except after a hard rain, when it becomes turbid and smells badly. The summer of 1883 was noted for the large number of cases of typhoid fever in Trinidad. I attended three cases in one family. They had used water from a well. About the time that the first case occurred, the river flooded the lower part of the town, and the well was filled with surface water. Other cases seen by me had used water from the water-works, and others again received their supply from the large well above mentioned, lying about a hundred feet from the river. Some lived in the river bottom, and others upon high hills. The water from the reservoir is used only in cases of emergency, the water being usually forced directly into the pipes. At this time it was said that the water from the reservoir and pipes was unclean, and at times tasted and smelled badly, but that from the other public source was, to all appearances, pure and sweet. I would ask how all these different sources could be contaminated with typhoid germs from patients? In November, 1884, I was called thirty-five miles into the country to see a boy who presented a typical case of typhoid fever. There were no other cases in the neighborhood. The water-supply was from a spring gushing out of the mountain-side, the water being carried in troughs for a distance of about a hundred feet. It was cold, clear, and pure. The nearest neighbor was about a quarter of a mile up the cañon. The house was rather open, and there were too many chickens, pigs, dogs, etc., around to render the sanitary arrangements of the best. Two other cases developed in the same family. In July, 1886, I was called to see a girl at a saw-mill camp about forty miles in another direction in the mountains. She was sick with typhoid fever. The water used was from a spring at the bottom of a cañon, about a quarter of a mile from the house. There were no other cases of the disease in the camp or neighborhood, as far as I could learn. From these and other cases I have concluded that, while unsanitary surroundings and the impregnation of water with decomposing material may cause typhoid fever, the germs from a previous case are not necessary to its development. A word about treatment. I am, with Professor Bartholow, a firm believer in iodine and carbolic acid. These and salicylic acid, when the stomach will retain it, with perhaps small doses of aconite and turpentine externally and internally for dry tongue and tympanites, have proved successful in my hands, as in eight years I have not lost a case."

ANTIPYRIN IN DYSMENORRHŒA.

Dr. Z. T. Dellenbaugh, of Cleveland, O., writes: "In your editorial on some of the less common uses of antipyrin, in The Medical Record for February 26, 1887, I do not find any reference to the use of this drug in dysmenorrhœa. Some time in July or August of last year it occurred to me that if antipyrin will relax a hyperæmic and dry skin by virtue of its action on the vaso-motor dilator centres, why will it not relieve an evident hyperæmia of the endometrium? In the first case of painful menstruation to whom I gave it, one of essential and oft-repeated trials with opiates and stimulants of all kinds with their unpleasant sequences, the antipyrin gave immediate and continued relief for that menstrual period, though the patient took but one dose of fifteen grains. Since then I have found that repeated doses of five grains do not afford the relief obtained by an initial dose of fifteen to twenty grains. Whether it will afford the prompt relief in painful menstruation complicated with membranous exfoliation or obstructions I am not prepared to say. I would, however, expect it to, since we occasionally meet with cases of obstruction, flexions, coarctations, and even exudative membranous exfoliations without pain at the menstrual period; an analysis of these, with the cases of essential dysmenorrhœa, inclines one to believe that dysmenorrhœa may, after all, be a neurosis allied to neurasthenia in its various manifestations."

THE HYPNOTIC EFFECTS OF ANTIPYRIN.

Dr. J. Edward Stubbert, of Bloomfield, N. J., writes: "In the editorial columns of The Medical Record of February 26th you refer to the use of antipyrin in cases of hemicrania, and suggest that the hypnotic action is due to 'cessation of pain.' In forty-seven cases of hemicrania I have failed to relieve pain in only one instance, *provided hypnotism was first produced by the drug.* If the attack is fully developed I administer fifteen grains of antipyrin and order the patient to lie down immediately and close the eyes. Sleep comes on rapidly, and in about twenty minutes the patient awakes free from pain. In two cases I was obliged to administer a second dose at the expiration of the first nap because the pain had not fully disappeared, although it was mitigated. In a few other cases, where the remedy was administered during the prodromal stage, no sleep was required, but when the hemicrania is fully developed the hypnotic effect of antipyrin is, I believe, absolutely necessary before relief from pain can be hoped for. In cases of fever, where the drug has been used for its antipyretic properties, I have noticed the same hypnotic action, and here it will be noted no pain is present to be relieved and *thereby* cause sleep. The hypnotic effect is the more marked in proportion to the size of the dose of the drug and the idiosyncrasies of the patient, and I have found that children require proportionately a much larger dose than adults. So confident am I of the hypnotic action of the drug that I at times have successfully substituted it for morphia."

Progress of Medical Science.

THERAPEUTICS OF ASTHMA.—Since the publication of Hack's article suggesting abnormal changes in the turbinated bones as the cause of asthma, specialists and general practitioners have, with the aid of highly magnifying reflectors, seen hypertrophied turbinated bones in many a patient, which there was a great temptation to reduce, either with some ingenious instrument, with the galvanic cautery, or with a powerful escharotic. Although the results have not been so gratifying as Hack's, they have gone far toward affording an apparent verification of his theory; for, if the so-called hypertrophied turbinated bones could be detected at first only with the aid of magnifying reflectors, it was not long before they were sufficiently hypertrophied to be distinct even to the naked eye. The pendulum, however, is beginning to swing back, as is evident from a recent lively and protracted discussion at several consecutive meetings of the Berlin Medical Society. A number of speakers took part in the discussion, and there seemed to be a consensus of opinion that cases in which asthma was benefited by cauterizing the nasal mucous membrane or the turbinated bones were extremely rare. Such treatment, it was said, should not be employed until a careful examination had been made with a sound, the parts having been made anæsthetic with cocaine, and an area discovered a touch upon which would call forth an attack. Schadewald broached a novel method of treatment, based on his no less novel theory of the pathology of the disease. He maintained that bronchial, or true asthma was due to a neurosis of the trigeminal nerves, and should be treated by faradization of those nerves, the applications being made during an attack, as if made in the intervals they would call forth a paroxysm. Lublinski emphasized his previous remarks as to the benefit to be derived from inhalations of pyridine, but the drug must be used with caution, as disagreeable and alarming symptoms may follow its injudicious use. Amyl nitrite nitro-glycerine, and sodium nitrite act in the same way as pyridine, but all these remedies find their more appropriate application in cardiac asthma. If any drug deserves the title of a specific in this affection, it is potassium iodide. The remedy was first recommended in asthma by Trousseau, but this use of it fell into oblivion for a number of years, to be only recently restored by the publications of Leyden and Germain See, the latter of whom recommends its administration with lactucarium. Potassium iodide is of great service also in the purulent bronchitis which occurs as a sequel to asthma. In many cases of this condition the various balsams are efficacious, and Lublinski has observed excellent results from the use of the Peruvian balsam combined with myrrh, the former in doses of from a grain and a half to three grains three or four times a day. If there is really a nasal affection, it should be treated according to its character, and not on any far-fetched theory of its etiological importance. But, in the treatment of asthma, it is of the greatest moment to distinguish true, or primary, asthma—by no means a common affection—from that which is secondary to disease of the heart or lungs. We need scarcely say that we have had only the former in view in this writing.—*New York Medical Journal.*

TONSILLITIS AND ITS RELATIONS TO SCARLATINA AND DIPHTHERIA.—Dr. Hingston Fox sums up his conclusions on this subject as follows: 1. There is a commonly occurring form of tonsillitis, symmetrical, varying much in severity, distinct from suppurative quinsy, due to septic causes, often attacking several members of one household, and frequently prevalent at the same time as scarlatina and diphtheria. 2. Short-lived outbreaks of so-called infectious sore throat occur, associated with unsanitary conditions, the cases often varying much from one another, but intermediate in their general characters between tonsillitis and the two specific fevers. 3. The throat lesion is the symptom most constantly present in both scarlatina and diphtheria, but its degree and character very greatly vary; it is in some cases apparently identical in nature in the two fevers; and it may be absolutely indistinguishable from the common form of tonsillitis first alluded to. 4. There is some reason for regarding scarlatina and diphtheria as essentially forms of tonsillitis which have acquired the power of infecting the system generally. 5. The virus of these two fevers may probably enter the lymphatic system through the tonsil, producing tonsillitis as a primary effect. 6. The specific character of these diseases is connected with the power of the poison-germ to overcome the resistance of the tissues so far as to reproduce itself in the human body without deterioration; a certain series of lesions is thus set up before the poison is destroyed, and in the meantime its multiplication affords a supply of *contagia* for the communication of the disease. 7. This power of withstanding the resistance of the tissues and reproducing itself within the human body has probably been acquired under a process of evolution. 8. There is nothing in the occurrence of scarlatina and diphtheria of wounds, and of other mucous surfaces than the fauces, to contravene the hypothesis that the poisons of these diseases in ordinary cases enter at the tonsils. 9. The tonsils are absorbent glands, and their function may not improbably be connected with the absorption of certain elements from the saliva.

THE RECIPROCAL INFLUENCE OF DIABETES UPON SYPHILIS.—The question of the connection between diabetes and syphilis is of recent date. Different authors have only kept in view the fact of syphilis being regarded as the cause of diabetes, and have paid but little attention to diabetes coexisting with syphilis. It is the latter point which gives great interest to the recent thesis of M. Arnaud. Two circumstances may arise where diabetes and syphilis are coexistent: (1) The patient may have been suffering from diabetes for a longer or shorter period when he contracts syphilis, and the latter complaint is modified in its evolution and progress from the fact of diabetes having preceded it; (2) diabetes developing after syphilis seems to be the direct or indirect consequence of that disease. The result of M. Arnaud's observations on this subject have led him to the following conclusions: When diabetes has pre-existed, it modifies the clinical aspect of syphilis, either because it induces cachexia, and thus renders the patient less able to resist the invasion of the disease, or because it exercises an injurious influence upon the anatomical elements by bringing them into direct contact with the sugar contained in the pathological secretions of the human economy. It cannot be denied that syphilis may give rise to diabetes, which may be more or less persistent, owing to the changes in the blood and tissues which it constantly produces. Syphilis may bring on another form of diabetes through tertiary products (gummata) becoming developed in the surrounding parts of the fourth ventricle and compressing the centre of glycosuria described by Claude Bernard. When syphilis develops in a diabetic patient, infective chancre and secondary lesions have a tendency to ulcerate. As these deviate from their ordinary aspect, they may give rise to an error in diagnosis. Under these circumstances, the evolution of syphilis appears more rapid than in a normal case of the complaint. According to some writers, sugar disappears when specific symptoms show themselves. M. Arnaud's observations prove that sugar seems to leave the urine more rapidly in these cases than in ordinary diabetes. Syphilis will prove more serious in diabetic patients than in others. Anti-diabetic should be combined with anti-syphilitic treatment in such cases.—*British Med. Jour.*

THE LATE SIR THOMAS WATSON received, for many years, $1,000 annually from the sales of his book.

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THE CAUSE OF THE RHYTHMICAL CONTRACTION OF THE HEART.

THERE have been two opinions held by physiologists concerning the mechanism of the rhythmical pulsations of the heart. Some have held that the beats succeed each other regularly by muscular action simply, without the intervention of the nervous system, at least as far as the rhythmical action is concerned. Others, and the majority, believe that the rhythm is under nervous control. But as the heart of a frog, for instance, will continue to beat for some time after its removal from the body, and consequently after all connection with the central nervous system has been severed, the regulating ganglia are supposed to reside in the substance of the heart itself. These ganglia, the most important of which are situated in the sinus, are not supposed to originate the cardiac pulsations, but simply to regulate them and give to them that character of rhythmical succession which is so characteristic of the cardiac muscular movements. Two German physiologists, Kronecker and Schmey, claim to have located the co-ordinating centre, in the heart of the dog, at the point of union of the upper and middle thirds of the anterior interventricular sinus.

Some experiments recently undertaken by MM. Germain Sée and E. Gley, and reported by them to the Academy of Sciences of Paris, seem in a measure to confirm these views. The experiments were made on curarized dogs, the two vago-sympathetic nerves being sometimes divided and sometimes left intact, artificial respiration being maintained, of course, during the continuance of the experiments.

A needle being thrust into the heart at the point indicated by the two physiologists above mentioned, there ensued immediately very energetic contractions of the auricles, which were, however, wholly irregular, rapidly becoming weaker, and finally degenerating into mere tremulous oscillations. These soon ceased, and the ventricles became fully dilated, while the auricles continued to beat rhythmically. As soon as these tremulous movements became established, the arterial pulse disappeared, the arterial blood-pressure fell to zero, and it was impossible to re-establish the ventricular movements. This effect was observed but three times out of fourteen experiments, a fact which the authors regarded as showing that this anatomical centre is either indefinitely located as yet, or else that it is very limited in its area.

Trial was then made of electrical stimulation of this supposed co-ordinating centre. Faradization of this point by a current of moderate intensity caused tremulous movements of the ventricles, and it made no difference in this respect whether the pneumogastric nerves had previously been paralyzed by atropine or divided, or left intact. These results were obtained not only after electrization of the upper third of the interventricular sinus, but also when the stimulus was applied to the middle and lower thirds, or even to any part of the ventricular walls.

These results, the authors thought, were not conclusive as to the existence of a co-ordinating centre for the muscular movements of the heart. The fact that a lesion of the heart at the point above indicated excited ataxic movements of the ventricular walls could not be gainsaid, and this would plainly point to the presence of a group of nerve-cells in this situation. But the question that still remained unsolved was the functional nature of this centre. It was possible that stimulation of this group of cells might excite such violent contractions of the cardiac muscle as speedily to destroy its irritability, so that it was incapable of recovering its normal function.

These researches may have a practical bearing in a strictly medical point of view, for, according to M. Sée, angina pectoris is due to the obliteration of the nutrient arteries of the heart-wall. He has also demonstrated that the injection of an inert powder into the coronary arteries, or the ligature of one of them, is followed by tremulous movements, apparently identical with those excited by electrical stimulation or injury with a needle. It is therefore allowable to assume, they conclude, that irritation of this collection of cells, following obliteration of a coronary artery, may transform the ventricular contractions, already disturbed, into the above-described oscillations, quickly becoming fatal.

However this may be, it seems reasonable to believe with the authors that much light may be thrown in the future upon the mechanism of angina pectoris by a careful study and increased knowledge of all the facts relating to this vital ganglion or group of nerve-cells lying in the interventricular sinus.

BEQUESTS AND DONATIONS TO THE NEW YORK ACADEMY OF MEDICINE.

AT the stated meeting of the Academy on May 5th the Treasurer for the Trustees reported the following munificent additions to the permanent funds:

1. From Henry S. Rokenbaugh, Esq., executor of the estate of Mrs. Celine B. Hosack (widow of the late Dr. Alexander E. Hosack, formerly of New York), the sum of $70,000, upon the following conditions, as expressed in the testatrix's will:

"Third: I estimate the total value of all the property which I acquired from the estate of my lamented husband as not exceeding the principal sum of seventy thousand dollars, and I do give and devise and bequeath unto the society or corporation known as 'The New York Academy of Medicine' the sum of seventy thousand dollars, payable within one year after my decease, which it is my

will and desire shall be devoted or applied by the board of trustees of the said society or corporation to the purchase or erection of a library building or lecture-room, or some other suitable building adapted to the purposes of said society, which, in memory of my dear husband, Alexander E. Hosack, shall in some appropriate manner be designated with and known by his name forever.

"If the said sum of seventy thousand dollars shall be insufficient to defray the entire expense of constructing the whole of any building, to the erection of which the board of trustees of the said society may deem it proper to apply the money, then it shall either be allowed to accumulate at interest until the amount shall be sufficient for the purpose, or it may be used and applied to the construction of any separate part of the building, or any particular room or suite of rooms, or any wing or addition to any building belonging to the society, and devoted to the objects for which the said society was incorporated, which can be separately distinguished from the other parts of the same building so as to be dedicated and designated in some suitable manner as a monument in memory of my husband."

2. From the same source, a free bed in perpetuity in the Roosevelt Hospital, as follows:

"Eighth: I do give and bequeath unto my executors hereinafter named, the sum of ten thousand dollars, in trust, to apply and pay the same (or so much thereof as may be necessary) to 'The Roosevelt Hospital' in the city of New York, to purchase a bed which, in memory of my husband, shall be known as the Hosack bed, and which shall be occupied from time to time by such sick and needy physicians as may for that purpose be named or designated by the President and Treasurer for the time being of the New York Academy of Medicine."

3. Through the President of the Academy, Dr. A. Jacobi, the donation of $5,000, largely due to the generosity of Mr. Jacob Meyer, of New York, upon the following conditions:

1. "The fund is to be forever known as 'The Philippine Meyer and Ernst Jacobi Library Fund,' and be so borne and described in the accounts of the New York Academy of Medicine and in any publication by the Academy enumerating the several trust-funds in its possession."

2. "The income from the fund to be applied to the purchase of books for the reference library. Each book so purchased to be appropriately marked and designated so as to indicate that it is the proceed of this fund."

3. "It is also covenanted and agreed that the existence of this fund shall in no way affect the appropriation of such other moneys or funds as the Academy may find desirable for the acquisition of journals or other books."

THE DOCTOR'S SUMMER PRACTICE.

THE approach of the summer months brings to physicians reminders of the great change which has occurred in the course of medical practice during the past fifteen years. In this time there has been a constant development of, and increase in, the custom of moving to the country or seaside for the summer, so that now in cities all the wealthy families and a majority of those of moderate means leave their homes for three or four months in the year.

The result is that the general practitioner in the city often finds himself almost without paying patients when the hot weather comes on. And it has come to this, that many physicians have to earn their living for the year during the fall, winter, and spring months.

The exodus of citizens from the cities in summer is bound to continue, for it is a practice based on good sense and good hygiene; therefore the wise physician will lay his plans accordingly. If the patient goes out of town, the doctor should go also. He should select some locality agreeable to himself and family, make it his summer home, and attend with diligence and skill to the physical ills of the exiles about him. By judicious continuance in such a course he will find that he can spend his summers pleasantly and with little expenditure of the hard earnings of the winter.

The charges made against the city doctor at summer resorts is that he is extortionate in price, and that he interferes with the practice of local physicians. These are, perhaps, true as regards a few of our profession who have the hard-headedness, the fine business instincts, and the advanced ideas in economics so much admired by some; but, on the whole, we incline to the hope that the vacation practice of the city doctor is conducted very honestly, and to the benefit of his fellow-men. But, at any rate, the physician who looks ahead will, if he is wise, so arrange his affairs that he can do a little work in the summer and make all the twelve months of the year contribute to his support.

RECENT VIEWS OF THE PATHOLOGY OF THE RENAL TROUBLES OF PREGNANCY.

AT a meeting of the Berlin Medical Society, not long ago, Professor Leyden read a paper upon dropsy and albuminuria in pregnancy. His contribution to the subject was one tending mainly to show how diverse are the present ideas as to the pathology of these disturbances. Renal disease in pregnancy is, according to Leyden, a form of disease caused solely by "the conditions of pregnancy," and diagnosticated by the fact that it begins in the second half of a first pregnancy chiefly, and progresses steadily until parturition occurs, when it generally disappears.

The anatomical appearances of the kidney have been found to vary greatly, from that of acute parenchymatous nephritis to that of congestion or anæmia. Leyden holds that the condition is one resulting from long-continued arterial anæmia.

Dr. A. F. A. King (*American Journal of Obstetrics*, March and April, 1887) has advanced "A New Explanation of the Renal Troubles, Eclampsia, and other Pathological Phenomena of Pregnancy and Labor." Dr. King's views evince originality and ingenuity, and they are presented in the attractive and logical style characteristic of this distinguished obstetrician.

Professor King's idea, in brief, is that the renal and other troubles referred to are brought about by the uterus not keeping above the pelvic brim—as it ought to do—until the time of labor is reached. The normal position of the pregnant uterus and fœtus is one of lateral obliquity, the head generally lying on one iliac fossa. If, for any reason, the womb stands vertically, then the head or breech presses down upon the renal and iliac vessels

It is very evident that if this theory is true there should be no eclampsia or albuminuria with transverse presentations, except from extrinsic causes. Professor King has industriously collected a large number of facts bearing upon this point.

Thus, he states that Schanta, who had 315 cases of eclampsia in 134,345 deliveries at the Vienna Hospital, found the head to present 304 times; face, 4; breech, 5; foot, 1; and transverse, 1. In 306 of these cases, 253 were primiparæ. From an analysis of Rambotham's 59 cases of eclampsia, it is fair to assume that there was not one of transverse presentation. Of the 14 cases in 7,404 deliveries in Guy's Hospital Lying-in Charity there were 13 head presentations and no transverse. In a total of 300,018 labor cases collected by Dr. King, with 212 cases of eclampsia, there is only one distinctly isolated coincident occurrence of eclampsia and transverse presentation during labor; and in regard to this case there is no detailed account.

Dr. King's views have a distinct practical outcome, for he states that disturbance of the normal lateral obliquity of the womb and child, with consequent descent below the pelvic brim, is caused by tight and ill-fitting dresses, corsets, coitus, and certain abnormal postures, all of which things can be measurably prevented.

MARTINEAU'S TREATMENT OF DIABETES.

In a recent issue of The Medical Record we referred briefly to the plan adopted by M. Martineau in the treatment of glycosuria. The results obtained by this method, as reported by the author, are, to say the least, remarkable. And, in view of the large number of cases, the length of time that the patients were under observation, and the professional standing and credibility of the reporter, the method would seem to call for a more extended notice than it has hitherto received.

The plan was adopted by M. Martineau, at the instance of Dr. Rouget, some twelve years ago, and in seventy cases in which it has been employed since 1875, a cure of the disease has been obtained in sixty-seven, or nearly ninety-six per cent. The method, which is simple enough, is described by the author in a paper read by him at a meeting of the Société d'Hydrologie, and published in the *Annales Médico-Chirurgicales* for March, 1887. The patient is not obliged to modify his diet to any great extent, except that he is, of course, advised to abstain, as far as possible, from starchy foods, fruits, and sugar. Instead of the ordinary beverages at meals he is to drink a solution of carbonate of lithia and arseniate of soda. A paper containing twenty centigrams (three grains) of carbonate of lithia and a tablespoonful of a solution of arseniate of soda, twenty centigrams to five hundred grams (three grains to the pint) of distilled water, are put in a syphon-bottle holding about a litre (two pints) of aërated water. The patient uses this water as his only beverage, drinking it with his meals and at any other time when he is thirsty. At meal-time, however, it may be taken mixed with wine, if the patient so desire. This is the whole treatment, and no other drugs are given, except for intercurrent troubles which may arise independent of the original malady.

The author reports several cases *in extenso*, one of which, the first, we will reproduce in brief to show the rapidity with which the sugar disappeared from the urine.

The patient was a man sixty years of age, who had suffered from glycosuria for five or six years. In September, when the treatment was begun, he was passing one hundred and twenty-three ounces of urine in the twenty-four hours, which contained three thousand one hundred and eighty grains, or over six and a half ounces, of sugar. Three weeks after the commencement of treatment he was passing seventy ounces of urine and six hundred grains of sugar. In December, three months after the patient first began treatment, he was passing but thirty-five ounces of urine, which contained three hundred and five grains of sugar. From this time until the patient's death, four years later, analyses of the urine were made every month, but no trace of sugar was found at any time.

This method, the author is led by his experience to believe, is efficacious only in those cases of diabetes occurring in individuals of a gouty or rheumatic diathesis. In the three cases in which no benefit was observed the patients presented no evidences of an arthritic tendency.

M. Martineau has shown a commendable degree of patience in thus waiting twelve years before giving his method to the world. But, as he says, this was because he desired to test it thoroughly, and to satisfy himself that it was really of value, before making for it any claims which later trials would show to be not borne out by the facts. He now, however, makes positive claims for this plan of treatment, and the confidence with which he asserts its efficacy in suitable cases will doubtless induce many others to make trial of the same remedies, with what results the future will show.

THE NECESSITY OF EXAMINING THE MOUTH BEFORE GIVING AN ANÆSTHETIC.

It may seem superfluous to repeat a caution which is contained in every text-book on minor surgery, but one is apt at times to grow a little careless, and to forget small details when the mind is occupied with anxious thoughts. When an operator has so many assistants that one can give his undivided attention to the administration of the anæsthetic, as should always be the case where possible, any omission of such details is, of course, inexcusable. But it often happens, in cases of emergency, that the assistant must not only give the anæsthetic, but also assist the operator in many other ways. He is then liable to forget the possibility that something may be in the mouth which is not unlikely, when anæsthesia is complete, to become loosened and fall back into the air-passages. It may be that the patient has a false tooth, or several false teeth attached to a plate, or a palate obturator, or some other apparatus to supply a deficiency in some part of the jaw. Children are very apt to have marbles, lumps of sugar, pieces of cake or candy, or the like, which some fond relative has given them to help them to bear the approaching ordeal with greater courage. Any one of these objects is liable to be drawn into the larynx when all the muscles are relaxed and reflex movements abolished, and when the patient is taking deep inspirations.

An accident of this nature is related by Dr. Trossart in a recent number of the *Lyon Médical*. The patient was

observed to be vomiting almost continuously at the commencement of anæsthesia, and afterward, when the head was turned over, a plate, with four teeth attached, fell out of the mouth. The object in this case was so large that it could not enter the larynx, but was drawn into the pharynx, and excited reflex efforts to vomit. Had it passed farther down, and become lodged in the œsophagus, the results might have been far from trivial.

Similar accidents have happened more than once, and a repetition of this caution would seem, therefore, to be worth the while. The cautious and those who always have their wits about them will pardon the repetition for the sake of their brethren with weaker memories. Always, as a matter of routine, examine the mouth of every patient before commencing to administer an anæsthetic. A neglect of this apparently trifling detail may cost a life.

THE NOMINATION OF A HEALTH OFFICER OF THE PORT

THE nomination again made by Governor Hill, of Dr. Charles Phelps for Health Officer of the Port, excites the most general and hearty approval. The recent investigation regarding the disinfection of rags has rather, whether justly or not, cast a cloud over the present health officer. His term has expired, and a new appointment is in order. Dr. Phelps is a gentleman widely esteemed and widely known; and it would be gratifying to the profession of this city to have one of its own distinguished members elevated to such an important trust.

THE QUESTION OF THE COMPENSATION OF EXPERTS AGAIN.

IN 1875 the Supreme Court of Alabama confirmed a fine imposed upon a physician who had refused to give expert surgical testimony on the ground that he had not been remunerated therefor. In 1879 the Court of Appeals of Texas held a somewhat similar doctrine, viz., that a medical expert could be compelled by the Court to testify as to the results obtained by a post-mortem examination. The law of Indiana (Rev. Stat., 1881, p. 94) is that experts may be compelled to appear and testify to opinions without payment other than that allowed to ordinary witnesses. The action of a certain Ohio court and the unfavorable state of affairs in New Mexico and Dakota has been set forth in THE MEDICAL RECORD of January 8th and February 5th.

It must have been from experiencing the hardships of decisions which prevail in Alabama, Texas, and Ohio that leads a correspondent to write a most emphatic protest against the decisions of judges who do not allow extra compensation for medical experts, and leads him to suggest the bringing out of a test case.

In our opinion, however, a test case is not needed. The majority of decisions, and in many States the law itself, favors the view that medical men should be adequately compensated for giving expert testimony. Indeed, in the present state of the matter it can be only ignorant or grossly partisan judges who refuse to allow such compensation, except, of course, in the States or Territories in which a law, like that passed by the stupid legislators of Indiana, exists.

News of the Week.

THE SECOND ANNUAL MEETING OF THE ASSOCIATION OF AMERICAN PHYSICIANS will be held in the Army Museum building at Washington, D. C., June 2 and 3, 1887.

NEW YORK PATHOLOGICAL SOCIETY.—The meetings of this Society will be held hereafter, beginning Wednesday evening, May 25, 1887, at the New York Polyclinic, 214–216 East Thirty-fourth Street.

THE NINTH ANNUAL CONGRESS OF THE AMERICAN LARYNGOLOGICAL ASSOCIATION will be held in the hall of the Academy of Medicine, New York, May 26th, 27th, and 28th. The profession is cordially invited to attend.

THE NEW HOSPITAL AT POUGHKEEPSIE.—The following gentlemen of New York City have been appointed the consulting board of the Vassar Brothers' Hospital at Poughkeepsie: *Consulting Physicians*—Drs. Fordyce Barker, A. L. Loomis, and J. H. Douglas; *Consulting Surgeons*—Drs. George F. Shrady, T. M. Markoe, and E. L. Keyes.

NEW YORK ACADEMY OF MEDICINE AND THE LATE DR. E. DARWIN HUDSON.—The Section in Practice met at the Academy, Tuesday evening, the 17th inst., and was called to order by the President, Dr. A. Jacobi, who spoke of the great loss sustained by the death of the Chairman, Dr. E. Darwin Hudson. The Section then elected Dr. Charles L. Dana Chairman, to fill the unexpired portion of the term. On motion by Dr. T. H. Burchard, a committee was appointed to prepare appropriate resolutions on the death of Dr. Hudson, to be reported at the next meeting of the Academy. The Section, as a mark of respect to the memory of its deceased Chairman, then adjourned.

ANÆSTHESIA OF THE ANTERIOR TWO-THIRDS OF THE NECK can be produced by making an incision, even a very slight one, in the skin in the neighborhood of the larynx. Laryngotomy, thyrotomy, and cutting the throat ought to be performed almost painlessly therefore. Such are the conclusions reached by the experiments of Dr. Brown-Séquard.

WOMEN AND THEIR ODORS.—Hysterical women under sexual or other excitement exhale an agreeable odor, say several eminent neurologists. A French writer goes further and says that in early youth many women exhale a perfume whose entrancement extends even to the clothes they have cast aside for the wash. Again, "in general hospitals one is never deceived, the female wards smell of butylic acid." With all due respect to distinguished experts in olfaction, it appears necessary to say that the foregoing is more or less preposterous nonsense. Female wards do not smell of butylic acid, and the perfume which extends to the clothes that have been given to the wash is more liable to be perspiratory, axillary, and leucorrhœic than an entracing emanation from Araby the Blest. Those who have observed an agreeable odor in women under sexual excitement are liable to the accusation of suffering from subjective disturbances at the time.

Reports of Societies.

NEW YORK ACADEMY OF MEDICINE.

Stated Meeting, May 5, 1887.

A. JACOBI, M.D., PRESIDENT, IN THE CHAIR.

DR. F. A. CASTLE, Treasurer of the Trustees, reported that the Academy had received, from the estate of Mrs. Celine B. Hosack, widow of the late Dr. Alexander E. Hosack, the sum of

SEVENTY THOUSAND DOLLARS.

That Mrs. Hosack had also given *ten thousand dollars*, for a *free bed* in honor of her husband, in Roosevelt Hospital, to be occupied by such sick and needy physicians as may for that purpose be named or designated by the President and the Treasurer of the Academy. The Treasurer further reported that the Academy had received, as a special library fund, the sum of *five thousand dollars*, to be known as

THE PHILIPPINE-MEYER AND ERNST-JACOBI LIBRARY FUND,

the income from which was to be spent annually in the purchase of books for the library.

DR. P. A. MORROW then read a

MEMOIR OF H. P. FARNHAM, M.D.,

which was a fitting tribute to the memory of a most worthy man.

THE ULTIMATE RESULTS OF THE MECHANICAL TREATMENT OF HIP-JOINT DISEASE.

DR. NEWTON M. SHAFFER read a paper on the above subject, in which he gave an analysis of fifty-one cases occurring in the service of the New York Orthopædic Dispensary and Hospital. In the performance of the work necessary to the ascertaining of the results he had been largely aided by Dr. Robert W. Lovett, of Boston, Mass. The principal object of the writers of the paper had been to arrive at *the ultimate results* of mechanical treatment of the disease in *dispensary* cases, where facilities existed for making and modifying the instruments and a competent corps of surgeons were in attendance. He then spoke of the difficulties in managing chronic dispensary cases, and also of the fact, which none would deny, that better results could be obtained in private practice. One of the objects of the paper was to demonstrate that it was not only possible, but

COMPARATIVELY EASY,

to treat hip-joint disease successfully and satisfactorily with the means offered by a well-equipped dispensary. To be sure, there were many cases which required hospital facilities, but there were very many bad cases which could be cured by dispensary treatment, with an occasional visit in addition to the general supervision of the surgeon. Dispensary treatment meant an interested parent or friend who would carry out the directions of the supervising surgeon.

THE OBJECTS AIMED AT IN TREATMENT

had been (1) to overcome, by mechanical means, any acquired deformity which existed before treatment was commenced; (2) to protect the diseased joint from traumatism; (3) to permit the patient to have an almost unlimited amount of out-of-door life; (4) to maintain that position of the limb which would reduce the deformity to the minimum, and at the same time favor locomotion when anchylosis occurred.

Abscesses, as a rule, were not interfered with. They did best when allowed to open spontaneously. As a matter of necessity, little or no medication could be employed in the treatment under these circumstances. The mechanical treatment consisted in the use of the long hip-splint, without a joint, from beginning to end. An intermediate splint would be used sometimes in the course of treatment in private practice.

Of the 51 cases, the histories of which *could be traced*, death occurred in 4, but after the lapse of several years from the date of their discharge from the dispensary. Six patients had relapses; they had been under treatment two, two and one-half, four, four, five, and seven years, respectively, and from two to five years passed before the relapse occurred.

Of the remaining 41 cases, 3 were reported well, but they could not be examined. The remaining 38 patients were examined carefully. They were under treatment from two to eight years. Eighteen were cured before ten years of age, with more or less of shortening, and not less than an inch of atrophy of the limb. In 19 cases there was practically anchylosis. In 3 cases there was

FREE MOTION IN EVERY DIRECTION.

Of these there was abscess in two, and no abscess in the other. But the amount of motion *grows less* as time passes.

As to the position of the limb, *adduction* was a very serious ultimate result. In only one case, notwithstanding the shortening of the limb, was there true lateral rotary curvature of the spine. The amount of shortening does not depend upon abscess. The muscular atrophy never entirely disappears.

Conclusions.—The authors of this paper concluded, *first*, that the conservative method of treatment promised better ultimate results than exsection of the hip-joint; *second*, that of the 51 patients discharged cured, 4 died, 2 presumably of tubercular disease, and 2 of acute affections; 6 relapsed, and of these 2 had been cured the second time, and 2 were under treatment; *third*, of the 41 who recovered no one had been incapacitated for doing a full day's work, and none of these had given any evidence of tubercular disease.

Dr. Robert W. Lovett, of Boston, did the work of measuring and otherwise examining the patients at their homes, and he found them to be of the average of dispensary cases. They were exceptionally healthy people, having recovered from their hip-joint disease. Only a few wore high-soled shoes on the affected side. Adduction was the most important deformity. A good deal of shortening with flexion was carried without serious inconvenience, whereas only a slight amount of adduction gave rise to marked impediment in locomotion.

DR. J. F. RIDLON believed it had been proved that dispensary patients with hip-joint disease could be treated successfully. It had been assumed that all these cases were tubercular in character, but he believed there were cases which were due to traumatism, and also to inherited syphilis. These facts should modify treatment. In a case due to traumatism, he thought it was good surgery to remove the dead bone, as was done when death of the bone occurred elsewhere. And he also believed that surgical interference could save the life of some patients which would be destroyed by the disease, treated only by mechanical means. If due to syphilis, anti-syphilitic measures should be adopted in addition to the splint, and he had seen syphilitic cases

RECOVER WITHOUT THE SPLINT

under anti-syphilitic treatment. In dispensary cases and tubercular patients, he thought that some gain could be obtained by the use of internal remedies in addition to mechanical means.

DR. S. KETCH said, while at the New York Orthopædic Dispensary and Hospital it was held that, in the majority of cases, the tubercular diathesis was present, such was not the absolute doctrine of the institution. Besides, it could be said, he thought, truthfully that a great many of the patients who came there received considerable internal treatment, such as cod-liver oil, etc. His personal experience with mechanical treatment had led him to believe that it was the most satisfactory method of

treating hip-joint disease. It was not only the ultimate result which made mechanical treatment so satisfactory, but it were quite as much the present relief which could be afforded by it. He believed that many of these patients were saved from the knife by means of mechanical treatment.

Dr. Lewis A. Sayre believed that, if mechanical treatment were properly applied, recovery could be expected in nearly all cases, whatever might be the predisposing cause. So far as his experience went, in almost all cases

SOME EXCITING CAUSE HAD DEVELOPED THE HIP-JOINT DISEASE,

and it could be traced to some injury. "A thousand and one" little injuries might start the trouble in a child that had some constitutional taint, whereas in a robust, healthy child no trouble whatever would follow these little thumps and bruises. And by recognizing the disease early and treating it with mechanical appliances, a cure could be effected in the great majority of cases, and also, as he thought, with much better motion than had been secured in the cases reported by Dr. Shaffer in his valuable paper. He knew of scores of patients who had recovered, with excellent motion.

But in some cases the peculiar constitutional condition of the patient prevented the disease from yielding to this method of treatment, and then the knife should be used. If under local and constitutional treatment the case progresses favorably, do not resort to the knife; but if, notwithstanding this, the disease progresses, he would, instead of allowing it to go on for six or eight years,

PERFORM EXSECTION

and remove the dead bone. So far as ultimate results were concerned, after exsection, there was no question. His own cases, taking the list as a whole, had not yielded as satisfactory results as could be obtained, because the operation had been performed in the very worst cases, many times in opposition to the opinions of other surgeons, and in cases in which the patients had been given up to die. In some of these cases, however, the final result had been as nearly perfect as it could be, and motion had been better than it was in the opposite

Dr. V. P. Gibney had been interested in the paper, because heretofore but little had been known concerning hip.

the ultimate results of mechanical treatment. There were two points that had interested him especially, namely: (1) The ultimate result with reference to motion, and (2) the ultimate result as to atrophy. It seemed to be proved by the paper that motion would *diminish* instead of increase as time went on, and that a certain amount of atrophy was permanent. Both of these results were important.

His facilities for observing mechanical treatment had not been very good until within a few years, and during that time he had not allowed an opportunity to pass without putting it to the practical test.

Dr. Sayre.—Thank God.

Dr. Gibney continued that, so far as his experience went, the immediate results had been most gratifying with regard to affording relief from pain, and the general comfort the mechanical treatment afforded the patient. Notwithstanding all these good results, both immediate and ultimate, he believed that

MUCH WAS YET TO BE LEARNED ABOUT THE METHOD.

Dr. A. B. Judson appreciated the fact that adduction was the most troublesome feature of the deformity attending hip-disease. Walking with an adducted limb was attended with a characteristic spasmodic lordosis at every step, and another striking peculiarity was found in the fact that the natural rhythm of the gait was destroyed.

Now, if the patient can be induced to restore

THE NATURAL RHYTHM OF THE GAIT

and to divide the time spent on the ground equally between the two feet, he will gradually and unconsciously substitute abduction for adduction in order to place the affected limb and the splint in the most favorable position for doing their share of the work of progression. It was his rule of practice to require the patients to observe the natural rhythm of the gait. He believed that adduction had been thus prevented and reduced.

Some children have a natural excellence in walking. They will easily balance themselves on the hip-splint when sitting on the perineal strap, and secure grace by giving the well limb ample time to take its step forward. Such patients will escape adduction. So will a child who, through parental watchfulness, has acquired the habit of walking with as much grace as the hip-splint allows; but the awkward and unrestrained lad will have adduction.

He was also of the opinion that after recovery the patient should persistently cultivate the natural rhythm of the feet, and that advantage should be taken of the dancing school and military drill, not only to assist the recovered patient to bear gracefully existing disability, but also to reduce or prevent the occurrence of adduction.

Dr. H. Ling Taylor regarded adduction as the most important deformity, but he thought it was due to the fact that patients shrank from putting their entire weight upon the perineal band. He believed that in private practice adduction could be overcome in every case; for he would then use, in the later stages of treatment, the jointed splint, which gave better results than the long splint alone, and would also use

THE ADDUCTION CRUTCH,

which transferred the pressure to the opposite groin, a piece of accessary apparatus that had superseded entirely the adduction screw. He would further remark that the patients who were so long under treatment were not necessarily doing badly, but they were retained under observation and treatment as seemed necessary.

Dr. L. H. Sayre thought that great credit was due to the authors of the paper and to the institution of which Dr. Shaffer had charge, as the results were very much better than anyone would have expected twenty years ago. He was pleased to hear Drs. Gibney and Taylor express their favorable opinions of mechanical treatment. By length of time, mentioned by his father and referred to by Dr. Taylor, he understood that it had reference to cases which were not progressing favorably, and in such cases he believed that it was better to exsect rather than to wait for the bone to exfoliate by the natural processes of the disease, which might require six or eight or more years, with the danger of involving the liver, kidneys, etc. After the operation, give the patient the benefit of mechanical treatment. At the same time he would not advise

EARLY EXSECTION,

as he believed that the results would not compare with those obtained by proper mechanical treatment.

The President said that, owing to the lateness of the hour, he would not prolong the discussion further than to state that he believed that treatment by mechanical appliances could be aided and shortened by general therapeutical means, of which he would speak in some future meeting of the Section on Orthopædic Surgery.

Dr. Shaffer said that he had been unable to differentiate between tubercular and syphilitic cases, except that in some instances the patients recovered under the influence of what was known as anti-syphilitic treatment, while in others they did not. In private practice he would use internal medication as an adjunct. The cases which they had observed as the basis of the paper were dispensary cases, and showed that, with a proper workshop and a competent corps of assistants, the wor

of four or five hospitals could be done successfully in an institution of that character.

He did not intend to consider

MECHANICAL TREATMENT *vs.* EXSECTION,

but merely to show that a large number of cases of hip-joint disease could be treated at home. He believed, however, that under proper internal medication, with mechanical treatment and the patients under the best hygienic influences, a larger percentage of recoveries with better results could be obtained—provided that amyloid degeneration of any of the organs was not present—than would be secured by excision.

Eight years were not consumed in controlling the discharge and sinuses, but in getting the limb into the proper position for the patient's discharge from treatment—the position which would render the limb most serviceable. Most of the long cases were

DRY CARIES,

in which the worst position of the limb and the greatest deformities were most likely to be encountered. He was not opposed to excision, but believed that the cases were rare in which it should be performed.

THE PRESIDENT announced that at the next meeting the subject of *Empyema* and its treatment would be discussed in a series of short papers; after which the Academy adjourned.

AMERICAN SURGICAL ASSOCIATION.

Annual Meeting, held in Washington, D. C., May 11, 12, 13, *and* 14, 1887.

WEDNESDAY, MAY 11TH—FIRST DAY—MORNING SESSION.

THE PRESIDENT, DR. HUNTER MCGUIRE, of Richmond, Va., delivered the opening address, on

THE NEED AND VALUE OF CO-OPERATIVE WORK IN SURGERY.

He said that he would occupy the time briefly, not with a discussion of some surgical subject, for the programme showed how rich the supply of material was in that direction, but with some remarks concerning the need and value of co-operative work in our profession, and afterward in suggesting some changes in the management of the meetings of this Association. Nearly every advance in whatever is accomplished by human enterprise is secured by co-operative effort. Every department of life is full of illustrations of the power of association in the accomplishment of great purposes, while the illustrations are almost as numerous of the failure of individuals to attain those ends, because they work unaided and alone. Advance in surgery can be more surely made by associations such as ours than by any individual efforts of man. The day has passed when the dictum of one man, no matter how exalted he may be, is received without question. The difficulties which beset us are numerous. Disease presents problems difficult of solution. We cannot apply to the human machine the fixed rules by which inanimate bodies are governed. The result of the work of the surgeon in private houses and in public hospitals must be different. Besides this, it is necessary to get rid of the rubbish with which we are too often flooded by ignorant but ambitious contributors. This is an easy task, but it is more difficult to know when to reject the material presented by skilful but unscrupulous workers who, to gratify their own personal vanity, make false returns of their labors.

I have mentioned only a few of the difficulties by which we are surrounded. Their influence over the true man, the true surgeon, should be to make him more patient, inspire him with more zeal, and teach him more plainly the value of co-operative industry. For the developments yet awaiting us we must be indebted to the contributions which every patient and conscientious laborer may bring to the common stock of ascertained knowledge, and we shall accomplish this best by the cultivation of a broad and generous appreciation of each other's work, from which every particle of envy at the success of others has been eliminated; by the hearty commendation which we give to all who have enlarged the boundaries of surgical science or who have improved its art.

In concluding his address the President made the following suggestions:

1. The formation of a business committee to prepare the work of the Association. The committee should select two general subjects in surgery to be discussed at the morning sessions of the first and second days.

2. The address of the President should be limited to half an hour, readers of papers to the same length of time, and those who take part in the discussions to fifteen minutes.

3. I venture to suggest the abrogation of Article 9 of the Constitution. This will allow us to admit to fellowship some men in this country who are really needed in the Association. While I believe in the rigid observance of the Code of Ethics of the American Medical Association and the absolute necessity of its enforcement in that body, there is no need for it in our Association. The only code that we should have is scientific work.

4. That the report of the committee with reference to the American Congress of Physicians and Surgeons be adopted.

5. That the constitution be so amended that propositions for membership shall lie over for one year. The qualifications for fellowship should be age, experience in surgical work, scientific attainments, with general culture.

A committee of three was appointed to take into consideration the suggestions offered by the President. The committee consists of Drs. S. W. Gross, C. H. Martin, D. W. Yandell, Moses Gunn, and C. Johnston.

The Association then went into executive session.

AFTERNOON SESSION.

DR. F. S. DENNIS, of New York, read a paper on

THE EXPLORATION OF THE BLADDER BY THE SUPRA-PUBIC METHOD.

A brief historical account of the operation was given. The first reported operation was that of Franco, in 1561. From that period to 1879 the operations were not numerous, but from 1879 to the present time the operation has been done with such success as to attract attention throughout the world. The time is not far distant when practically the only two operations will be supra-pubic lithotomy and litholapaxy. Supra-pubic lithotomy is simple in technique, safe in execution, free from injury to the reproductive organs, radical in results, curative in application, and brilliant in statistics. The many serious accidents attending the lateral operation are avoided. For a few days before operation a milk-diet should be employed. The day previous to operation the bowels should be moved with castor-oil. The morning of the operation an enema should be used, so as to empty the rectum for the introduction of the rubber bag. The parts should be washed with antiseptic solution. After the patient has been etherized the surgeon should introduce a rubber bag into the rectum so as to be above the internal sphincter. Into this twelve ounces of warm water is to be introduced. This quantity will have to be increased or diminished according to circumstances. The danger of rupture of the rectum in elderly people and young boys should be borne in mind. The urine should be withdrawn and six ounces, more or less, of an antiseptic solution introduced into the bladder. The catheter may be left in the bladder and stopped with cork, and this will serve as a guide to cut upon. The distention of the rectum and bladder increases the distance from the pubes to the anterior cul-de-sac of the

peritoneum to three inches. The incision should be made in the median line, and should extend for three or four inches above the pubes. When the transversalis fascia is reached the use of retractors, on the principle of the eye-speculum, facilitates the operation. Having divided the fascia, the end of the catheter can be felt and cut upon as a guide. The bladder may then be seized with two tenacula and opened. Where free exploration is desired sutures are introduced on each side of the incision. The stone is removed either with the fingers or forceps. The bladder may then be washed out. A catheter should be introduced through the urethra, but not left longer than twenty-four hours, on account of the danger of exciting traumatic urethritis. In the majority of cases the wound of the bladder should be left open. In cases of calculi the condition of the tissues is such that primary union is unlikely. In certain other conditions, such as rupture, the wound may be closed, for here the condition of tissues is different. The abdominal opening is to be closed and a tube introduced.

This operation is indicated (1) for hard, large calculi, and in persons suffering with paraplegia and deformities rendering lateral lithotomy difficult; (2) for removal of certain foreign bodies, such as hair-pins, etc., and for the treatment of chronic cystitis; (3) in cases of tight stricture, fibroma of prostate, tumors of the bladder, and for rupture. In its extraordinary simplicity, its reduced mortality, its freedom from danger, and safety for the general practitioner, it compares well with litholapaxy.

The speaker had collected one hundred and twenty-four cases of supra-pubic operation for stone done since 1879. Previous to this date the rate of mortality was thirty per cent. Since then the mortality has been reduced, there being eighteen deaths, a mortality of fourteen per cent. Seven of these deaths may be justly excluded, giving a mortality of nine per cent. According to Sir Henry Thompson's statistics, the death-rate from the lateral operation is twelve per cent. According to the same authority, the mortality of lithotrity is six per cent. In considering the mortality of this operation, two facts are to be considered. The mortality may be improved by more rigid antiseptic precautions. The second fact is that the operation has been limited to the largest stones. When the smaller stones are included the death-rate will be reduced. Specimens showing the position of the bladder under various conditions were then shown.

Dr. John H. Packard, of Philadelphia, read a paper on

SUPRA-PUBIC CYSTOTOMY FOR OTHER PURPOSES THAN THE REMOVAL OF CALCULI.

In 1883 the speaker removed, by supra-pubic cystotomy, a piece of shawl-pin five inches in length, which had been passed through the urethra. Since then he has done this operation a number of times. In cases of retention of urine from stricture, where a fair attempt to pass an instrument fails, he draws the urine by aspiration. In a short time an instrument can usually be passed. He did not recall a case in which it was necessary to repeat aspiration. The following cases were cited:

July 7, 1855. — Mr. G——, aged eighty-five, had retention due to large prostate. The bladder was greatly distended. The urine was drawn off with a long catheter; but he desired more permanent relief. Supra-pubic cystotomy was performed, and a glass ovariotomy tube, bent like a tracheotomy tube, was introduced. The patient improved decidedly, but suddenly died, July 9th, from heart, failure, the result of sudden exertion.

J. C——, aged forty-three, came under observation, January 21, 1885, at the Pennsylvania Hospital, with a history of retention, the result of old stricture. The bladder was greatly distended, and no instrument could be passed. There were frequent chills and profuse sweats. The next day Dr. Thomas G. Morton made a perineal incision, opening an abscess; the catheter then passed into the bladder. The following day the bladder was again distended. Supra-pubic incision was then done, a catheter passed through the abdominal opening, and the neck of the bladder escaped through the perineal wound. On February 7th a large mass of slough came from the abdominal wound. The patient then rapidly improved, and was discharged cured, April 21st.

H. F——, aged forty-three, had retention for four days. The penis, scrotum, and skin of abdomen were swollen, tense, and rigid. Free incisions were made. The bladder was opened and a tube introduced. On June 4th an instrument was passed by urethra. On July 13th the patient was discharged, and has continued well.

Mr. S——, aged sixty-three, admitted with enlarged prostate and frequent attacks of retention. August 13, 1886, supra-pubic incision was performed and the bladder opened. Although the condition was improved the patient died of exhaustion, August 29th.

The next two cases occurred at the Pennsylvania Hospital within the past few weeks. W. E——, aged seventy, was admitted, April 24, 1887, with retention due to enlarged prostate. Supra-pubic cystotomy was performed and a large quantity of putrescent urine removed. A rubber tube was passed into the bladder. The urine contained albumen to the amount of one-half its bulk. Granular casts were also found. A typhoid condition developed, and the patient died on the fourteenth day after admission.

R. W——, aged forty, was admitted the same day; he had double inguinal hernia and double hydrocele. He had passed no urine for fourteen hours. Catheterization was attempted without success. Supra-pubic incision was then performed, and a rubber tube introduced. He has done well since then, and is beginning to pass some water by the urethra.

Method of procedure.—The fullest antiseptic precautions should be observed in these cases. In most of the cases on which the author had operated the question whether or not the bladder should be distended had not presented itself, as the bladder was already over-distended. The bladder should never be more than moderately distended, not more than six or eight ounces of a boric-acid solution being employed. To retain the water in the bladder a convenient method is to bend the urethra on itself and hold it in this position. There seems to be more advantage and less risk from distention of the rectum. Many writers recommend that the bladder be steadied by an assistant, but this was regarded as needless and objectionable.

The incision through the skin should be free enough to give ready access to the deeper parts. When the bladder is reached it is desirable to secure it in some manner before puncturing. For this purpose a small double hook may be used; a small tenaculum may answer. When a large opening is to be made a double ligature is, perhaps, the best device. In cases of retention the curved trocar and cannula may now be at once used; the cannula should afterward be substituted by the tube. The speaker's custom is to make the opening in the bladder just large enough for the tube. The proper point for making the opening seems to be about at the middle of the exposed portion of the wall of the bladder, which would be about one inch or one and one-half inch above the pubes.

The drainage-tube should go well into the bladder and have lateral openings only near its extremity. The external end may be closed with a cork or clip, or by bending it. In old men with atonied bladders he had sometimes used glass tubes. If a large opening has been made in the bladder it may be closed around the tube with a few catgut sutures. The tendency of the wound is to close quickly, except where the tissues, as well as the general system, are in bad condition. The edges of the wound in the skin can be apposed with sutures of catgut or silkworm gut.

In concluding, the speaker asked: If the supra-pubic section had been first tried and generally adopted, is it likely that the perineal operation would have been afterward performed on account of its greater ease, simplicity, and efficiency?

Dr. A. Vander Veer, of Albany, N. Y., read a paper entitled

TO WHAT EXTENT CAN WE CLASSIFY VESICAL CALCULI FOR OPERATION? WITH A REPORT OF CASES AND REMARKS ON THE DIFFERENT METHODS EMPLOYED.

The speaker gave the detailed histories of forty-one cases which he had operated on. The various methods employed were lithotomy, rapid dilatation of the urethra, and Bigelow's operation (litholapaxy).

There were seven cases of perineal lithotomies, with two deaths and five recoveries, the former being very old men with large stones. Of attempted litholapaxies and an immediate perineal lithotomy there were two cases, both resulting in death, one occurring in the speaker's practice, the other in the practice of a friend. Both were severe cases of large stone, the patients presenting a history of much suffering through many years. Of dilatation of the urethra in the female, and washing out of fragments or removal of stone entire, there were six cases, all recovering, with no complication whatever. Of urethral calculi in the male there were four cases, all recovering. Of simple lithotrity in the male there was one case, followed by recovery.

Of attempted litholapaxies, but which were not completed, there were four cases, three ending in death and one, the stone hiding in a sac, later underwent perineal lithotomy and recovered. One was probably complicated with some form of tumor of the bladder, and a history of chronic disease of the kidneys. One was a case of chronic alcoholism, one was complicated with sacculated bladder, and the last two were cases of surgical kidney of the very gravest kind.

Of the litholapaxies in the male there were eighteen patients, having twenty-two operations, four requiring a second operation. Of the number, sixteen recovered and two died; of the latter, one after the first and one after the second operation.

With reference to supra-pubic lithotomy, the author said that, with the excellent results we are ever likely to obtain from rapid lithotrity, the operation must necessarily deal with severe cases of large, and in some instances sacculated, stone. He did not believe that we should ever expect from it as great a per cent. of recoveries—it is hardly possible. A table of reported cases of supra-pubic operations was given, showing in 142 adult cases a mortality of twenty-two per cent.; in children under fifteen years of age 113 cases gave a mortality of 10.5 per cent.

The operation of litholapaxy is certainly indicated where the stone is small or of moderate size, and, contrary to the teachings of a few years since, can be done in very young male children with proper instruments. In male adults, if there is severe chronic cystitis, no matter what is the size of the stone, the supra-pubic or some form of perineal lithotomy seems best. The cystitis can then be successfully treated, and there is less danger of a reformation. The speaker thought that it would be found by future statistics that cystitis has much to do with the necessity for a second or third operation. He thought that contracted bladder in the male, with adhesions, had not received the attention which it demanded. This must, in some instances, embarrass supra-pubic lithotomy. On anatomical grounds the supra-pubic operation will be much simpler in the youth, as the bladder is much higher in the pelvis at this time of life. In girls rapid dilatation or supra-pubic lithotomy will undoubtedly reach all cases. In adult women vaginal lithotomy may be added.

The discussion of these papers was postponed until Thursday morning. Adjourned.

THURSDAY—MAY 12TH—SECOND DAY—MORNING SESSION.

THE COMMITTEE OF CONFERENCE WITH REFERENCE TO THE CONGRESS OF AMERICAN PHYSICIANS AND SURGEONS

reported that it had attended the meeting of conference held in Washington, September 24, 1886. At this meeting the following resolutions were adopted:

Resolved: 1. That it is desirable that the following special societies, The American Surgical Association, The American Ophthalmological Association, The American Otological Association, The American Neurological Association, The American Laryngological Association, The American Gynecological Association, The American Dermatological Association, The American Climatological Association, with the Association of American Physicians, shall arrange for a conjoint meeting in the city of Washington, September, 1888, and subsequently at intervals of three years at the same time and place.

2. That this arrangement shall not interfere in any way with the autonomy of each special society; and that each society shall retain the right to withdraw at any time from this conjoint scheme.

3. That the special feature of the meeting shall be the conjoint assemblage of the special societies on two evenings during the session, on one of which there shall be an address delivered by the President of the conjoint meeting, and on the other there shall be communications by a referee, and a referee on some subject of general professional interest.

4. That each special society approving this report is invited to appoint one representative (with an alternate), and that the representatives so appointed shall constitute an executive committee to serve for one year, with power to select such officers for the first conjoint meeting as may be deemed necessary; to propose a programme for said meeting; to make all other arrangements, and to prepare and submit a plan of organization for future meetings.

5. That all expenses connected with the conjoint sessions shall be apportioned equally by the Executive Committee among the special societies participating.

Owing to the views entertained by the Committees of the Ophthalmological and Dermatological Associations with regard to the interval of times of meeting, they abstained from voting upon the first resolution.

The report was adopted, and Dr. C. H. Masten, of Mobile (with Dr. J. Ford Thompson, of Washington, as alternate), was appointed as the representative of the Association.

The following was announced as the Nominating Committee: Drs. J. Collins Warren, J. Brinton, T. F. Poewitt, N. P. Dandridge, and D. W. Yandell.

The Treasurer, Dr. P. S. Conner, reported a balance of $738.46 in the treasury.

The discussion of papers read on Wednesday was then taken up.

Dr. W. T. Briggs, of Nashville, held that the surgeon should have all operations at his command, and should select the one adapted to the particular case. In certain cases, such as large stones, or deformities of pelvis and lower extremities, supra-pubic lithotomy is undoubtedly the best operation. The operation which he regarded as the best is one through the median line. There is no reason why fragmentization of a large stone should not be combined with the medio-lateral operation. The operation is easier than the lateral operation. Incision in the manner mentioned, with the removal of all stones at once, he thought would have a less mortality than litholapaxy.

Taking all kinds of cases, at all ages, his first seventy-four cases were operated on by this method without a death. Then he had two deaths; in one a pelvic abscess complicated the case, and in the other there was scrofulosis. Forty-six cases were then operated on, with one death. This case died three months after operation, of

general tuberculosis, with wound ununited. It is probable that in properly prepared patients, without organic disease, the mortality will be nothing.

Dr. D. Hayes Agnew, of Philadelphia, said we cannot commit ourselves positively to any one operation. The median operation is undoubtedly the safest operation through the perineum. The only damage likely to be done is in extraction; but this can be avoided by nicking the neck of the bladder, which admits distention to almost any extent. Where the stone is large, and yet is one which should come through the perineum, an incision may be made on each side. Drainage is more readily effected by the perineal operation.

Dr. J. R. Weist, of Richmond, Ind., had performed the medio-bilateral operation in eight cases, all of which recovered. With one exception all the patients have been old. From the accounts of the supra-pubic operation given yesterday, he inferred that the operation is more difficult of performance than the one described by Dr. Briggs.

Dr. H. H. Mudd, of St. Louis, stated that his first operations were performed by the perineal method, with good results. He then began the use of litholapaxy, which, in the majority of cases, takes the place of the perineal operation. The supra-pubic operation is of service for the removal of certain large stones, and for exploratory purposes. In considering this operation it must be borne in mind that the existence of contracted bladder with adhesions will render the supra-pubic operation difficult or impossible. Instances in which this condition was present were related.

Dr. J. Collins Warren, of Boston, stated that during the past year he had seen two cases of the supra-pubic operation, both in the practice of others. One was for stone and the other for tumor. There seemed to be no difficulty in the operation. Both cases recovered without a bad symptom.

Dr. Theodore Varrick, of Jersey City, had removed through the perineum a stone weighing seven ounces and two scruples. There was no perceptible laceration, and the boy recovered completely.

Dr. David Y. Yandell, of Louisville, had performed ninety-two operations by the perineum, eight by lithotrity and six by litholapaxy. It did not seem to him that the supra-pubic operation was an easier or better one than those which he had mentioned. There were seven deaths from the lithotomies. In none of the cases was there any return of the stone. In the eight lithotrities there was a return of the stone in two cases. In the six Bigelow operations there was a return in two cases.

Dr. John B. Roberts, of Philadelphia, considered the high operation certain to be a very important one. If we wish to make a free exploration of the bladder, the high operation is better than the one through the perineum. In cases of stone operated on by a surgeon without special experience in this direction, the supra-pubic operation is the safer. With reference to Dr. Packard's suggestion to treat retention of urine from stricture by supra-pubic cystotomy, he considered this too serious a step to take in the first place. His view was that persistent efforts should be made to introduce a filiform bougie which will drain off the urine. Simple aspiration above the pubes will give a chance for the passage of an instrument through the urethra in two or three days.

Dr. J. E. Michael, of Baltimore, said that supra-pubic aspiration seems to be all that is necessary for retention due to stricture or prostatic disease, and, under proper precautions, is safe. In prostatic cases the use of a soft catheter will accomplish all that can be done, unless some radical operation is attempted. As to the advisability of the supra-pubic operation for exploration, for some cases of prostatic enlargement, and for exceptional cases of foreign bodies, there can be no question. It was an operation which promised more in selected cases, than any procedure with which he was acquainted, and taking all considerations into account, was not attended with special danger.

Dr. J. Collins Warren, of Boston, read a paper entitled

A STUDY OF THE PROCESS OF REPAIR AFTER RESECTION OF THE INTESTINES AND SOME OF THE COMPLICATIONS WHICH OCCUR.

The author referred to the anatomy of the wall of the intestine, calling particular attention to the thin submucous, fibrous coat, which was the strongest of the various coats of the intestine. In introducing the sutures in cases of wound of the bowel it is desirable that a few fibres of this fibrous coat be included, but care must be taken not to perforate the mucous membrane. A number of experiments made upon dogs was then described. The operation consisted in removing a portion of the intestine and a V-shaped portion of the mesentery, and then bringing the parts together. The Lembert suture was the one used. The dogs were killed at varying times after operation, from three to eight days. In these cases the intestines were found matted together around the seat of operation, but a current of water flowed freely through the gut. In one case the abdomen was opened a few days after operation, and this matting together of the various coils of intestine found. The intestine was replaced and the wound again closed. Six months later most of the adhesions were found to have disappeared.

Dr. Charles B. Nancrede, of Philadelphia, read a paper on

SHOULD LAPAROTOMY BE DONE FOR PENETRATING GUNSHOT WOUNDS OF THE ABDOMEN INVOLVING THE VISCERA?

Reference was made to the experiments of Wegner and Grawitz, showing that the healthy peritoneum can dispose of air, serum, bile, and healthy urine. When, however, air and putrescible fluids in greater amount than could be disposed of in a short time were introduced, decomposition occurred and septicæmia resulted. A notable exception was that living, defibrinated blood never decomposed under these circumstances. This seems to prove the truth of the suggestion of the author that the presence of fibrin-ferment, and probably its absorption, is one of the dangers of peritoneal traumatism. The ordinary micro-organisms produce no evil effects, provided the quantity of putrescible matter does not exceed that which may be disposed of in a short time. In small quantities the pathogenic micro-organisms produce no harm. Suppurative peritonitis is produced by these micro-organisms when stagnant fluids are present capable of nourishing the bacteria, when the surface of the peritoneum has been destroyed by caustic fluids, and when there is a wound of the peritoneum.

The practical application of these experiments teaches that all blood and serum should be removed and free drainage provided; every wounded surface must be coaptated; if a tube is used, the opening must be carefully guarded; the depression of the circulation present during shock must be removed, and the vascularity of the peritoneum must be kept as near the normal as possible.

When visceral wounds do undoubtedly exist the tendency of these cases is invariably toward death. Hemorrhage in itself is rarely fatal, but a very small collection of blood may be followed by fatal consequences, either through the induction of sapræmia, or by furnishing pabulum for the development of organisms productive of suppurative peritonitis. In nearly every case death is due to septic peritonitis caused by extravasated matters. Of those attacked with peritonitis ninety per cent. die within twenty-four hours. When recovery ensues the effused matter is absorbed, and a limited adhesive peritonitis glues the injured organ to the abdominal walls or to a neighboring viscus. This process is successful in about eight per cent. of the cases.

Shock and the risk of rendering a peritonitis septic and diffused, which might have remained local and simple, are the dangers of laparotomy. But as we have the

power of rendering the inflammation resulting from the manipulations innocuous, shock is practically the only result to be dreaded.

If these facts and the deductions from them be true, all ball wounds of the abdomen involving the stomach, intestines, bile, or urinary bladder should be treated by suture or by resection and suture; injured omentum should always be excised, and the serous surfaces carefully sutured. Wounds of the liver and pancreas are to be treated in the manner to be described. A wounded spleen or kidney is to be removed, provided certain contraindications do not exist. Even penetrating wounds of the abdomen without involvement of the viscera are better treated by exploratory section than by the expectant method. In many instances unsuspected injuries of the blood-vessels and viscera will be found and appropriately treated. The track of the ball should be enlarged, under aseptic precautions, until it has been determined whether or not the peritoneum has been opened. Then median section should be performed to ascertain the existence of and repair any damage that may have been done. The above remarks can only apply to wounds of the anterior and lateral walls of the abdomen. When the posterior wall is involved, it is unadvisable to ascertain the fact of peritoneal penetration by direct exploration. In these cases a correct opinion is almost always difficult and often impossible without laparotomy.

Profound shock, if not due to hemorrhage, is a contraindication to operation. The surroundings should not contraindicate operation in a proper case provided the operator be expert in abdominal surgery. Most cases will do better if left to nature than they will if operated on by a bungling surgeon. If well-advanced peritonitis exists, laparotomy is contraindicated. Where there is no visceral complication, operation under these circumstances may sometimes be justifiable. Laparotomy, if done at all, should be done at the earliest possible moment that the condition will admit of it. Shock is the only thing that should delay the operation, and this should not do so if the condition is produced by hemorrhage.

In operating strict antiseptic precautions should be carried out. The incision should always be median, extending from a short distance above the umbilicus to two inches above the pubes. Unless there be free hemorrhage the small intestines should be carefully gone over, keeping them constantly enveloped in towels wrung out of hot water. Afterward the stomach, spleen, kidneys, bladder, etc., must be carefully examined. The source of a severe hemorrhage must at once be sought after. Wounds of the bowel should be secured with the Lembert suture and dusted with a little iodoform. Wounds of the liver, if occupying its free border, should be coaptated, if possible, with dry aseptic catgut, which will soon swell and fill the track made by the needle. If this cannot be done, the hemorrhage possibly may be arrested by the thermo-cautery, or if the bleeding is free, the wound should be plugged with an iodoform gauze tampon. If at the close of the operation the bleeding is almost completely checked, the cautery may be used as a further protection, and the tampon removed. If, however, the bleeding is still free, the tampon should be replaced and allowed to remain permanently. Wounds of the pancreas, spleen, and kidneys are to be treated in a similar manner. If these measures fail the spleen or kidney is to be removed. Wounds of the bladder had better be united with dry catgut. Contused portions of the bowel should be excised. Wounded or contused omentum or mesentery should also be removed. In removing a portion of the bowel the cuts should correspond to the distribution of a large mesenteric branch. Should the pulse fail during the operation, flushing the abdominal cavity with hot water is often of service. The peritoneal toilet is most quickly and effectively made by irrigation with warm sterilized water and subsequent removal with sponges. Wounds of the peritoneum should be united. In closing the abdominal cavity, the peritoneum should be sutured with fine silk or catgut. The muscular aponeurotic and cutaneous structures should then be united with strong silk. The wound should be dusted with iodoform, and the dressing completed by the application of a pad of absorbent cotton and a flannel bandage.

Alimentation should be carried on by the rectum for forty-eight hours when possible. Where peritonitis comes on after the operation, the treatment will depend upon whether it has developed rapidly or gradually. In the former case there is often evidence of shock from vasomotor paresis, and in these cases small doses of morphia with atropia will be of service, while large doses of opium may prove fatal. This should be continued until pain is relieved and the patient falls into a quiet sleep, from which he is readily aroused. In the latter stages of peritonitis one or more hypodermics of atropia will at times save otherwise hopeless cases. For the control of the vascular processes involved in peritonitis we have two powerful measures in the ice-coil to the abdomen and in the use of leeches if applied early and the patient has not lost much blood. If the temperature continues to rise, despite treatment, it is probable that ptomaines are being absorbed, producing sapræmia. In such cases, irrigation with safe antiseptic fluids is indicated.

(To be continued.)

Army and Navy News.

Official List of Changes in the Stations and Duties of Officers serving in the Medical Department, United States Army, from May 8 to May 14, 1887.

ALEXANDER, C. T., Lieutenant-Colonel and Surgeon. Granted leave of absence for four months, with permission to go beyond sea, to take effect May 23, 1887. S. O. 105, A. G. O., May 7, 1887.

HARVEY, P. F., Captain and Assistant Surgeon. Granted leave of absence for four months, with permission to go beyond sea, to take effect June 10, 1887. S. O. 105, A. G. O., May 7, 1887.

BIART, VICTOR, Captain and Assistant Surgeon. Ordered for examination by Army Retiring Board at Fort Leavenworth, Kan. S. O. 107, A. G. O., May 10, 1887.

ELBREY, F. W., Captain and Assistant Surgeon. Ordered for examination by Army Retiring Board at Washington, D. C. S. O. 109, A. G. O., May 12, 1887.

Official List of Changes in the Medical Corps of the United States Navy for the week ending May 14, 1887.

GRAVATT, C. U., Surgeon. Detached from U. S. S. Michigan.

LUMSDEN, G. P., Passed Assistant Surgeon. Ordered to the U. S. S. Michigan.

ASHBRIDGE, RICHARD, Passed Assistant Surgeon. Detached from the Naval Academy and ordered to the Practice Ship Constellation.

STREETS, THOMAS H., Passed Assistant Surgeon Promoted to Surgeon.

THIRST IN YOUNG INFANTS.—It is a mistake to suppose that because milk is a liquid food it is at the same time a drink which is capable of satisfying the thirst of infants. Although milk appeases hunger, it makes thirst more intense after it has remained some time in the stomach and digestion of it has begun. It is thirst which causes healthy, breast-nourished infants to cry for long periods of time in many instances. There are many cases of indigestion due to weakness or insufficiency of the child's gastric juice which would be greatly benefited or even cured if the child were allowed an occasional drink of water.

Medical Items.

Contagious Diseases—Weekly Statement.—Report of cases and deaths from contagious diseases reported to the Sanitary Bureau, Health Department, for the week ending May 14, 1887:

	Cases.	Deaths.
Typhus fever	0	0
Typhoid fever	8	2
Scarlet fever	72	9
Cerebro-spinal meningitis	2	2
Measles	91	8
Diphtheria	120	46
Small-pox	11	5
Yellow fever	0	0

To Arrest Nasal Hemorrhage.—In persistent hemorrhage from the nasal cavity, plugging the posterior nares should not be done until an attempt has been made to check the hemorrhage by firmly grasping the nose with the finger and thumb, so as completely to prevent any air from passing through the cavity in the act of breathing. This simple means, if persistently tried, will, in many cases, arrest the bleeding. The hemorrhage persists because the clot which forms at the rupture in the blood-vessel is displaced by the air being drawn forcibly through the cavity in the attempt of the patient to clear the nostrils. If this air is prevented from passing through the cavity, the clot consolidates in position and the hemorrhage is checked.—*Edinburgh Medical Journal.*

Sugar in the Blood.—A series of researches has been completed by Professor Seegen, of Vienna, which would appear to show that the sugar formed by the liver is derived from albumen and fat. Seegen also believes that the blood passing from the liver contains an infinitely greater quantity of sugar than that entering the organ. That the newly formed sugar in the liver is wholly independent of saccharine food, as well as of the carbohydrates introduced with the food. That even the hepatic glycogen is unconcerned in the production of sugar in the liver. The fact that sugar is formed from fat is a new one, and is not in accord with previously entertained chemical and physiological ideas. It appeared to the author, therefore, of much interest to experimentally demonstrate the conversion of fat into sugar. This was accomplished by bringing together fatty bodies and blood with finely divided liver-substance. The settlement of this question, that sugar is formed from fat by the liver, seems to point to that organ as the great laboratory in which the food is changed for the purpose of life, for the performance of work, and the production of heat. It has a great practical significance, inasmuch as it teaches us the full worth of fat as material for food. —*Weekly Medical Review.*

For a crying, irritable, peevish infant, Professor Bartholow speaks very highly of the following:

℞. Sodii bromidi..... gr. v
Mist. asafœtidæ.....f3j M.
Sig.—*Pro re natâ*

If there be no flatulence, simply give the bromide in camphor water.

Fasting Exhibitions.—They do these things differently in Germany. The enterprising individual named Cetti, whose exhibitions in Italy and in Paris last year will be remembered, proposed recently to make exhibition of his fasting powers (for money) in Berlin, but the authorities very properly prohibited the stupid exhibition. The *Medical Press* supposes an Act of Parliament would be required in our favored free country (*i. e.*, England) before any city authorities would dare to take such high-handed action in the case of an exhibition, however senseless, so long as there was no actual danger to life.

Chloroform and Ether.—Dr. J. P. Wilson, of Poughkeepsie, writes that, after a considerable experience with anæsthetics, he has come to the conclusion that the best way is to use both chloroform and ether. He begins with ether, and after the choking sensation has passed away, combines the two until complete relaxation has been produced, when chloroform alone is used. In childbirth and for children he uses chloroform alone.

The Prognosis in Acetonæmia.—Dr. J. C. Neal, of Archer, Fla., referring to the article by Dr. Cheesman on "Acetonæmia," writes: "For some years I have felt obliged to pronounce a fatal prognosis in the fevers incident to Florida, whenever the fruity, vinegar-like odor appeared in the breath, especially if the urine had a specific gravity of over 1.024. This odor is noticeable a day or two before death, and the wine-red reaction of the urine with ferric chloride occurs generally within a few hours of the fatal coma. I look upon these tests as exceedingly valuable, especially the fruity odor, and when it has occurred in cases of malarial hæmaturia, marasmus, cholera infantum, and continued fevers, I have never witnessed a recovery."

Professor Ball's Treatment of the Morphine Habit consists, first, in placing the patient under strict watch in a maison de santé; second, in taking away the morphine more or less completely; third, in giving hypodermatic injections of sparteine to relieve the cardiac depression. Sometimes a little morphine is added, and sometimes nitroglycerine is given also.

A Six-fingered Family.—A communication having reference to twenty-seven individuals and five generations is summarized as follows in the *Rev. Internat. des Sci. Méd.* First generation: Man, born in the year 1752, had six toes on one foot. Second generation: A son with six toes on one foot; a daughter, normal. Third generation: This daughter had five children, among whom were a son and daughter each having six fingers on each hand. Fourth generation: The daughter last mentioned had eight children, including one son having six toes on one foot, another son and two daughters each having six fingers on each hand, and one daughter having both six fingers on each hand and six toes on each foot. Fifth generation: The daughter last mentioned (the *Revue* makes a mistake here) had three children, including a son doubly deformed like his mother, and a son with six fingers on each hand, the feet being normal. Moreover, one of the two daughters of the fourth generation (with only the hands affected) had eight children, several of whom were normally developed, but the rest were deformed as follows: One daughter had an osseous thickening at the digital extremity and on the outer border of the fifth metacarpal; one son had six fingers on each hand and six toes on each foot; and another son had six fingers on each hand. Thus, in the first generation, one person was affected, and in the second also one; in the third, there were two cases of deformity; in the fourth, five; and in the fifth, in all five; that is, fourteen deformed persons altogether during five generations of this interesting family.—*British Medical Journal.*

Wiring the Patella—Pyæmia—Death.—A patient was brought to St. Mary's Hospital, Quincy, Ill., in the service of Dr. William A. Byrd. He had an old fracture of the patella, the two pieces of bone being separated for five inches when the leg was flexed. The limb being perfectly useless as it was, he was very anxious for the patella to be repaired. The bones were cut down upon, and each piece transfixed by two wires. By tightening the wires the parts were brought nearly together. Tenotomy of the quadriceps femoris was required before they could be brought into close apposition. The wires were twisted; through and through drainage established at the lower part of the knee's joint. He did well for a while, but pyæmia ensued, of which he died.

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Original Articles.

A RARE FORM OF SEPTICÆMIA FOLLOWING OPERATION FOR URETHRAL STRICTURE; SEPTICEMIE GAZEUSE FOUDROYANTE.[1]

BY R. W. TAYLOR, M.D.,

SURGEON TO CHARITY HOSPITAL, NEW YORK.

THREE reasons prompt me to report the following case. First, because it illustrates a form of septicæmia not generally known or systematically described in the English language; second, because its history presents a typical clinical description of this rare and deadly affection; and third, because it is unique, I think, in literature, as an illustration of the complication of an urethral operation by this form of septic infection.

In the spring of the year 1878 I was asked by an esteemed colleague, now deceased, to assist him in an operation for urethral stricture, and, if the precarious state of his health rendered it necessary, to take more or less complete charge of the subsequent treatment. The patient was a man, aged twenty-eight, of temperate habits and athletic build. His stricture had followed several attacks of gonorrhœa, from which he had suffered during the previous nine years. Otherwise he had enjoyed perfect health. His urine was examined several times prior to and just before the operation, and found to be normal. The stricture was at the bulbo-membranous junction, and admitted a No. 4 bougie, French scale. Under ether this stricture was incised by means of Maisonneuve's instrument, and a steel sound No. 32, French scale, was passed, without any hitch, into the bladder. The operation was performed on Sunday at 4 P.M. I need scarcely add that every attention to cleanliness was observed, and that the operation was uncomplicated by any drawback, such as we sometimes experience, requiring withdrawal and reinsertion of the cutting instrument, or repetition of the confirmatory introduction of the sound. In fact, the utmost care and gentleness were observed, and we both thought that there had been no unnecessary wounding of the tissues. Quinine was given when the patient came out of the ether. All seemingly went well, until Monday morning. The urine was passed freely four hours after the operation, and the patient slept tolerably well all night. At noon on Monday he complained of a dull, uneasy sensation in the perineum, of languor and want of appetite, and informed us that he had not urinated since the previous evening. His temperature was 101° F.; tongue rather dry and coated, and skin dry. A hydragogue cathartic was given at once, which operated freely on the bowels. A small quantity of urine was voided. In the evening the general condition was similar to that of the morning, except that the temperature had reached 104° F. Infusion of digitalis was given to stimulate the kidneys, and ten minims of Majendie's solution were injected into the arm to cause sleep and relieve the restlessness and anxiety of the patient. A specimen of urine, of which a small quantity had been passed during the evening, was examined by me and found to be bloody in appearance, acid in reaction, of a specific gravity of 1.028, highly albuminous, and to contain hyaline and granular casts in abundance, and blood- and pus-corpuscles. His sleep was broken and troubled during Monday night, and on the following morning we found him utterly prostrated by weakness, very nervous, anxious, restless, with headache, nausea, and great thirst. Temperature was 102° F., tongue parched, skin dry, urine scanty, and bowels inactive He had taken Vichy water and milk and infusion of digitalis. The patient complained of great pain in the perineum. We found the tissues in the course of the urethra from the base of the scrotum to the verge of the anus swollen and boggy. A flaxseed poultice was ordered to be applied continuously. The situation in the evening was similar, but rather more pronounced. The temperature was 105° F. The bogginess, which had early in the day been limited to the perineum, had at 9 P.M., Tuesday, extended fully six inches to the left and was the seat of preternatural heat. Poultices were continued. The existence of the extravasation of urine was at first suspected, but the subsequent course of the case showed that that diagnosis was not warranted.

To quiet the extreme anxiety and restlessness fifteen drops of Majendie's solution were injected into the hypogastrium, with the hope of also allaying the local pain. At 2 A.M. on Wednesday I was summoned in great haste, my colleague being too ill to leave his bed. I found the patient in great mental and physical agony; so restless was he that he could hardly remain in one spot, and so utterly weak and prostrated that he could scarcely move. His sufferings had been much increased within the past six hours by severe dyspnœa. The temperature had fallen to 102° F., the pulse was 110 and filiform, and the action of the heart tumultuous. His facies wore a pinched and agonized look, with a deadly earthy pallor, and sunken eyes surrounded by dark circles. The whole of the left buttock, beginning at the urethral region, presented a very peculiar appearance. The integument, as far as the crest of the ilium, was distended, tense, and hot. Pressure upon it revealed œdema and emphysema. The peculiar crackling noise, as if air was present underneath, could be distinctly heard. Over this morbid expanse the integument had undergone striking changes. A marked lowering of the temperature of the skin was noted at this time. In patches it had a bronzed color, comparable in hue and density to the rind of ham. Intermediate to these hand-sized patches of pigmentation were irregular ecchymotic spots, and between these discolorations the normal hue of the skin was present, traversed by dark-blue lines of swollen, congested veins. The edematous and emphysematous condition of the skin ended in a well-defined margin. The perineal region was of a deep red, and edematous. Nausea was so great that scarcely any fluid could be retained, while the thirst was unquenchable. A small quantity of urine had been passed. He begged continually for hypodermic injections of morphine, which would for a short time steady his pulse and in a measure relieve him of the dyspnœa which intensified his sufferings very much. At noon the œdema and emphysema had extended to the hypogastric region, had invaded the left side and right gluteal region, and was rapidly increasing in every direction. The bronzed and ecchymotic patches developed coincidently with the œdema. The temperature in the axilla was 98½°. With the exception of a few short naps the patient had been without sleep since Monday night.

The condition of the patient in the evening was simply an intensification of that of noon. The greater

[1] Read at the first meeting of the American Association of Genito-Urinary Surgeons, at Lakewood, N. J., May 18, 1887.

part of the trunk and the right leg had been attacked, and the face, which all along had been pinched, became somewhat swollen. Amid these terrible sufferings the intellectual faculties of the man remained perfect. At this time his great restlessness, his agony, utter prostration, and dyspnœa were painful to behold. His unceasing appeals for death were piteous in the extreme. At 10 P.M. the axillary temperature registered 97° F., and the pulse so small and rapid that it was impossible to count it. His condition continued to grow worse until 7 A.M. of Thursday, eighty-seven hours after the operation, when he died in untold agony, in the full possession of his mental faculties, of failure of the heart's action. The corpse presented a horrible appearance, and emitted an intolerable, sickening stench. The head and neck were swollen beyond recognition. The scrotum was as large as a man's head, purple, gangrenous, and oozing. The body was nearly twice its normal size, and when tapped by a small instrument, such as a pencil, gave resonance similar to that of a drum. The bronze and ecchymotic patches had invaded the whole integument, and large bullæ, some distended with bloody serum, others ruptured and exuding a fetid fluid, were scattered over the trunk.

Though spoken of by Larrey in 1792, and again in 1836, and at different times described in a more or less imperfect manner by Martin de Bazas, 1836; Chassaignac, 1849; Maisonneuve, 1853; Velpeau, 1855; and Salleron in 1858, this affection was really not well known until 1870. It is to French surgeons, moreover, that we are indebted for the bulk of our knowledge concerning it. A multiplicity of names have been applied to it, many of them unprecise, while others, based on opinions as to its nature or upon individual symptoms, were more or less imperfect. The following list includes the chief titles: Emphysème gangréneux ou empoisonnement traumatique (Chassaignac), érysipèle bronzé (Velpeau), pneumohémie putride (Maisonneuve), gangrène foudroyante (Maisonneuve and Frèry), emphysème du moignon (Salleron), infection putride aiguë (Perrin), gangrena invadente (Bottini), septicémie gangréneuse aiguë (Morand), gangrène foudroyante traumatique (Jubin), œdème aigu purulent (Pirogoff), panphlegmon (Fischer), septicémie aiguë à forme gangréneuse (Terrillon), gangrène gallopante (Gosselin), gangrène gazeuse (Mollière), gangræna septica acutissima (Hueter), acute traumatic and spreading gangrene (W. Maccormac), acute spreading gangrene (Sydney Jones), and traumatic gangrene of many authors. Though so much has been written on this affection by so many observers, there is really but one systematic and exhaustive article on the subject, and that is written by a French surgeon of marine, Dr. Trifaud,[1] who, though he adopts the name given to the affection by Mollière, thinks that the expression septicéme gazeuse foudroyante is more exact. In this I fully agree with him. Trifaud's admirable study is based on one hundred and twenty-three cases, twelve of which were his own.

This disease occurs in greatest numbers among the wounded of armies and in the navy, and is particularly deadly in persons addicted to alcohol. It may have its point of departure in any solution of continuity exposed to the air, but seems to follow injuries of the leg rather than of the arm. Out of the one hundred and twenty-three cases collected by Trifaud it was found seventy-five times in wounds of the leg, and was more rapidly fatal where the wounds presented extensive anfractuosities. It always begins thus locally, and from the point affected spreads, and unless arrested by amputation involves the whole body, constituting one of the most terrible and deadly accidents known to surgery. While in most cases it appears in epidemic form in camps, ships of war, and crowded hospitals, it may also appear sporadically, as in the foregoing case, in a recent case at the St. Thomas Hospital,[1] London (Mr. Sydney Jones), and in one case in private practice, and another in hospital practice, both patients of my friend Dr. R. F. Weir. During the Crimean War, Salleron, out of sixty-five amputations, saw this form of septicæmia develop in fifty-eight cases within eight days, and seven times after the eighth day, while in Jubin's experience in the Hôtel Dieu, at Lyons, he observed its appearance in nine cases on the second day after traumatism. It rarely appears after pus-formation occurs in wounds. It is a singular fact that, while this affection was of frequent occurrence during the Crimean War, Salleron reporting sixty-four cases in six hundred and twenty-nine operations, during the Franco-German War of 1870 and 1871 French surgeons knew but little of it and regarded it as a form of hospital gangrene, and, further, that in 1881, when it became epidemic at the Hôtel Dieu, at Lyons, it was not seen in the equally crowded hospitals in Paris.

Septicémie gazeuse foudroyante has a clearly marked clinical history which, in the majority of cases, varies very little from the type-form; hence there is no necessity for errors in diagnosis. Beginning in the wound, it manifests itself by pain of varying severity. The parts look unhealthy, red, and swollen, and a thin, reddish, ichorous fluid exudes therefrom. Unless then arrested by ablation and thorough cauterization the disease inevitably extends. Then we find the painful and boggy point of departure, and very soon the œdema, the emphysema, the bronze and ecchymotic patches, the tortuous lines showing dark and swollen veins generally by continuity of tissue. In some cases, however, spots of the disease appear at points remote from the original focus, transmitted by the circulation. Soon we find the whole body invaded—its great distention, the formation of bullæ and oozing surfaces, and its rapid disintegration. French observers lean to the opinion that there are two forms of this affection—the one in comparison slow, pursuing much such a course as that observed in the foregoing case; the other extremely rapid, and fully meriting the adjective *foudroyante*, or its English equivalents, thundering, fulminating. In a case reported by Morand, the disease, beginning in the middle of the leg, spread to the base of the thigh during the eight or ten minutes necessary for anæsthesia and the preparation of instruments. According to my reading, however, it is only in the epidemic form on fields of battle and in crowded hospitals that this lightning-like course is observed. Unwholesome surroundings and debility from any cause undoubtedly tend toward such a result.

The subjective symptoms of this form of septicæmia are very constant and typical. They are quite fully portrayed in my details of the case. We find in a short time the thin, rapid, arhythmical pulse and the early appearing and increasing dyspnœa, which causes the patient so much suffering. Then comes the earthy pallor of the face, its pinched, anxious expression, with its deeply set eyes, surrounded by black rings. Besides there is the indescribable weakness, the restlessness and jactitation, and anxiety which increases to agony. The tongue becomes parched, the stomach more or less intolerant, though the thirst is severe and continuous. Sometimes there is bilious vomiting, sometimes diarrhœa, and at others constipation. And so do these symptoms become more intense until death relieves the sufferer, who usually is perfectly conscious to the last. During the first few hours of the disease the temperature may rise several degrees, but very soon it falls until several degrees below normal are reached.

In the light of our present knowledge of the rôle of micro-organisms in the causation of disease, the origin of this terrible affection is readily understood. At the time the foregoing case occurred we knew very little of these organisms, and less of their effects. It was quite natural, therefore, that my colleague and myself should look upon the complication as being caused by decomposition of

[1] Revue de Chirurgie, October, November, December, 1883.

[1] Lancet, February 4, 1887.

the tissues and fluids, and as being an anomalous form of septicæmia. It is the opinion of recent observers that this fulminating form of septicæmia is caused by a specific septic bacterium. Trifaud says that an absolute experimental demonstration of the rôle of the microbe of this form of gangrene has not as yet been made out. But certain facts point to it as the direct cause. These are, the constant presence of the microbe in the fluids of the body, and its extensive and rapid multiplication therein; the reproduction of the disease in animals by inoculation with the fluid containing this microbe, and the failure to reproduce it when the serum used has been previously filtered; and lastly, the negative fact that where perfect antisepsis is followed the disease has not been known to occur. I think, therefore, that a very strong case has been made in favor of the microbian origin of this deadly disease. We know as yet very little of a precise nature of the life-history and physical appearance of this bacterium. Trifaud thus describes it, and I prefer to use his own words and to let other observers make their own translation: "Cette bactérie est anatomiquement characterisée par un bâtonnet long et grêle, présentant à l'une ou aux deux extrémités un nucléole; elle possède des mouvements nombreux et variés; elle monte, descend, tournoie dans le liquide de préparation au milieu de nombreux corps lenticulaires et de spores."

The bacterian origin of this affection being conceded, the practical application of the fact forcibly suggests itself. When we know that such a terrible and deadly scourge as this disease may originate in so simple a lesion as a leech-bite, and in all wounds, traumatic or surgical, our duty to use all intelligent and conservative measures toward thorough antisepsis is plainly and forcibly indicated.

As to the origin of the disease in the case which I have detailed, I am constrained to say that I think the morbific agent was carried to the deep urethra either by the urethrotome or the sound. I must here add that the operator was a man thoroughly versed in all genito-urinary operations and one of the most careful and painstaking of men in all details incident to an operation and as to care and cleanliness of instruments.

Owing to the rapidity of decomposition, in all cases of death from this form of septicæmia autopsies must be made immediately. It is then found that the disease has involved the cellular tissue, which is softened and permeated by a reddish fetid fluid and by gas, which is generated in large quantities after death. There is also a diffluent condition of the blood, but pus and metastatic abscesses are never found.

Trifaud very pertinently asks whether many cases of death from supposed poisoned projectiles were not those of septicémie gazeuse foudroyante.

40 West Twenty-first Street.

Mortality in Public Lying-in Hospitals of Germany.—Döhrn, in *Zeitsch. f. Geb. und Gyn.*, p. 121, 1886, draws attention to the great diminution in the mortality of lying-in women which has taken place in the above-mentioned establishments since the introduction of antiseptics. He selected the period of 1874–83, since in 1874 antiseptics were scarcely used anywhere, while in 1883 they had become very general. The total number of cases of labor was 104,287, and 1,429 women, or 1.37 per cent., died. The vast improvement indicated by this percentage will be clear on comparison with the statistics of previous years. Thus, in 1866, Lefort found the average mortality in the lying-in hospitals to be 3.4 per cent., while Winckel, in 1869, calculated the mortality on 500,000 births to be 3 per cent. Even this great improvement, however, in lying-in institutions leaves their mortality far behind that of women attended in private practice; in the latter the percentage of deaths is only 0.6 to 0.7 per cent. Various influences contribute in bringing about this result.

ON TEMPORARY OVERSTRAIN OF THE BLADDER, PRODUCING LOCALISED ATONY AND CHRONIC RETENTION OF URINE.[1]

By F. N. OTIS, M.D.,

Clinical Professor of Genito-Urinary Diseases in the College of Physicians and Surgeons, New York.

Long continued obstruction to urination, as through organic stricture or enlargement of the prostate gland, while often causing a general thickening and rigidity of the bladder-walls, is recognized as capable, in certain cases, of producing a mechanical overstrain and consequent thinning of the muscular structure of the bladder, diminishing its contractile power, and thus preventing, to a greater or less extent, the complete discharge of urine from the bladder by voluntary effort.

This condition is called atony or inertia of the bladder, to distinguish it from the paresis or paralysis of the bladder which is dependent upon nerve-lesions.

While, however, atony of the bladder, as a rule, is due to long-continued urinary obstruction, and is chiefly found in elderly persons whose muscular structures are already more or less enervated, yet this is a form of this trouble which results from a sudden overstrain through even a single attack of retention, at any period of adult life, and independent of any organic obstruction. Such an attack may be the result of spasmodic stricture caused by irritation of the muscular urethra through a contracted meatus urinarius or a stricture of the urethra (even though slightly narrowing its lumen), or through inflamed hemorrhoids in persons otherwise healthy. It may occur through temporary loss of sensibility, as from the effects of alcohol or narcotics; or during the course of a low fever; or from a convulsion or any nervous shock; also from disregard of desire to urinate, or from sexual irritation or excess. A retention from any cause may, within the space of even a few hours, produce an overstrain of the muscular structures of the bladder, causing entire loss of the voluntary power of urination; a loss which, especially if occurring in advanced life, not infrequently necessitates the use of the catheter for the passage of every drop of urine during the remainder of the patient's lifetime.

The frequency with which such accidents as the foregoing have been brought to my notice has impressed me with the importance of, if possible, a greater solicitude in regard to the condition of the bladder in all persons who have been for any period insensible from any involuntary cause, or who have experienced any decided nervous shock, or who are the subject of any urinary difficulties.

I desire on this occasion to call attention to a few cases in my own experience bearing on this point.

In the first place, in order to illustrate the cause which I believe to be the most frequent in producing urinary retention, and thus atony of the bladder, to a greater or less extent, I will cite a case reported to me by the late Prof. R. W. Pease, of Syracuse, some time since:

General H——, aged sixty-five, previously free from all urinary trouble, while walking was seized with a desire to urinate, and on attempting to do so was quite unable to pass a drop. Dr. Pease was called some few hours after, and attempted to draw his urine by means of a flexible catheter, No. 20 (F.); the size of the meatus passed the instrument readily as far as the bulbo-membranous junction and there it was arrested. Various sizes, soft and metallic, were used with the same result. A consultation was called, in which several prominent physicians and surgeons of Syracuse took part. The patient was etherized, and efforts were made with various instruments, from No. 20 (F.) to the filiform size, to enter the bladder, but without success. There was no enlargement of the prostate. As the bladder was then considerably above

[1] Read at the meeting of the Association of Genito-Urinary Surgeons of America, at Lakewood, N. J., May 18, 1887.

the pubis, it was determined to relieve it by aspiration. Just as the aspirating-needle was about to be inserted, mention was made of the fact that such cases were claimed by Dr. Otis to be sometimes due to a spasm of the compressor urethræ muscle, caused by a contracted meatus urinarius. The meatus was forthwith divided, and the largest catheter available (30), of the French scale, was introduced, and passed readily into the bladder. As the doctor expressed it, "It slid into the bladder like a boy sliding down an ice-covered hill."

Professor Alfred C. Post relates the following:

In March, 1884, he saw in consultation a lawyer, aged sixty-two, with a retention of urine. There was a history of several previous attacks, which were relieved by the introduction of a small catheter into the membranous portion of the urethra. The urine flowed at this point, but the instrument could not be passed into the bladder. The trouble was believed to be caused by senile enlargement of the the prostate. Examination by the rectum showed that there was no such enlargement. The orifice of the urethra was contracted to 15 of the French scale. Dr. Post incised it and passed 24, the largest catheter he then had, easily into the bladder and relieved the retention. On the following day he incised the orifice still farther, and passed a solid sound, No. 33, with ease. The patient regained at once the power of emptying the bladder voluntarily, and, after a period of several months, was found to have retained this power.

Mr. C——, aged seventy-two, referred to me by Dr. C——, of Ohio. History of difficulty of urination for two years previously. His trouble was assumed to be from prostatic hypertrophy, and the use of the catheter was commenced, using it twice in the twenty-four hours. Twice within the next few months he had a complete retention of urine for a day, with much pain; since that time was able to void but a very small quantity of urine voluntarily. Examination showed but slight prostatic enlargement. Urine increased at will through the catheter. Highly ammoniacal and purulent. Attempts at voluntary urination frequent, with pain in glans penis at close. Examination of the bladder failed to detect stone. Examination of urethra showed a normal calibre of 38, a narrowing at 4 inches of 5 mm., and at 3 inches one of 8 mm., also a narrowing at the orifice to 26; these strictures were divided to 38, and 32 solid sound passed into the bladder.

The immediate result of the operation was slight constitutional disturbance, lasting forty-eight hours, frequent necessity of use of catheter every hour or two for twenty-four hours, then a sudden improvement—intervals, six to eight hours; complete loss of pain at glans penis after voluntary urination and gradual increase of quantity voided. On the seventh day he emptied his bladder voluntarily. He went home on the tenth day with the understanding that the occasional use of the catheter should be continued until the power of emptying the bladder was fully restored. A recent letter from his physician informs me that the use of the catheter is still required to completely empty the bladder, but that there has been no retention; the pain in the glans penis, originally relieved by the operation, had returned. In this case, on account of the age of the patient, 32 sound only was introduced through the deep urethra after operation; a full distension at this point would probably have produced more permanent results, although increasing the risk of constitutional disturbance.

Mr. F——, a gentleman of seventy, suffered with posterior spinal sclerosis for several years, but was able to walk about his apartments, though with difficulty. He lived alone, declining to have any personal attendant. One morning in January last was troubled with slight diarrhœa; he took an accidental overdose of Squibb's tincture of opium. During the narcosis which followed he had a retention of urine of from twelve to eighteen hours' duration; previously to this he had no urinary difficulty. The bladder was gradually emptied by catheter, during the next twenty-four hours from three to four pints being withdrawn. The use of the catheter was continued for twenty-four hours longer, when, having completely recovered from his narcosis, it was found that he was unable to pass a drop of urine voluntarily. He was found not to have any prostate enlargement. This complete retention continued, relieved only by catheter, for the next two weeks, requiring its passage every two hours, day and night, when he regained voluntary power of urination to the extent of passing an ounce or two while in the closet. As a 24 F. catheter had been easily passed, no examination was made for stricture. This was now done, resulting in finding several points of contraction, strictures of large calibre, of 13 mm. (27 F.) in a normal urethra of 40; meatus, 32 F. These were divided and 40 sound passed through the strictures, 38 into bladder. There was not the least constitutional reaction. There was an immediate increase in desire to urinate, requiring now the use of the catheter every hour or two for about a week, caused by a slight cystitis of the vesical neck. This, however, yielded to ordinary measures and he began to urinate voluntarily at irregular intervals, and requiring the passage of the catheter less and less frequently, until at the end of a month he would go five and six hours without the necessity of emptying his bladder. His general health continued excellent, his mental condition improved in a very marked degree, and even his power of locomotion was increased, but his inability to empty his bladder completely continued, having habitually from two to four ounces of residuum after every voluntary micturition. In the meantime ergot, strychnia, iron, cold-water injections into the bladder, douches, etc., had been administered, without apparently affecting the local difficulty in any way, and the case continues in about the same condition to-day.

Another case was one where a slight paresis of twenty years' standing and of central origin complicated the atonic condition. The patient was able to pass the urine voluntarily, with the exception of an ounce or two of residuum. About a month since a uræmic convulsion occurred. Two hours preceding this the urine had been drawn by catheter. Two hours after, when I saw the case, the bladder was prominent above the pubis and I drew off twenty-three ounces of urine of a specific gravity of 1.005. This retention was followed by a complete loss of the voluntary power of urination, which continued for several days.

In May, 1885, Mr. M——, was referred to me by Dr. B. of Canada, with complete loss of the power of voluntary urination. His history was as follows: Three years ago, having had no previous difficulty in urination, he, on one occasion, forgot to void his urine on going to bed. Attempting it on the following morning, he found himself unable to pass a drop. A catheter was introduced by his physician without much difficulty, and a large amount of urine drawn off. This loss of power continued. He was obliged to learn the use of the catheter. From this time, in spite of much treatment by electricity, strychnia, mineral waters, and a thorough course of mercury (as syphilis was suspected by a physician at one of the springs which he visited), he went on without improvement in his urinary function. After a year he had an attack of cystitis, lasting some five weeks, during which his power of urination returned and he was compelled at times to urinate every half-hour. When this cystitis passed off, however, his ability to urinate also departed and he remained in this condition absolutely without being able to pass a drop of urine voluntarily, and was obliged to use a catheter on an average of once every few hours up to the time when he came under my observation, fully two years from the date of his first attack.

The general health of the patient was enfeebled. He was the subject of great mental depression, and was much of the time absorbed in the contemplation of this bladder trouble, but he suffered no pain.

On examination, patient passed a No. 20 gum-elastic

catheter with ease, although at times there was some difficulty from urethral spasm. The urine drawn was clear. There was apparently no atony of the bladder, as the urine was propelled through the catheter with force and was promptly increased at will. There was no prostatic enlargement, and nothing abnormal could be detected through examination of the bladder by metallic sounds or bimanual touch. Penis, 3¼ inches in circumference. By urethrometer, 32 mm; at bulb and anterior two inches then there was a narrowing to 25 mm. (7 mm.), for half an inch anterior to which the urethra was contracted at several points from three to five millimetres; narrowing at the meatus to 28 mm.

The presence of more or less stricture had been recognized by his physician, and as all measures used had failed to afford relief, he was referred to me for any operation which might promise to restore his urinary function.

The presence of strictures of large calibre, as in the present instance, had been associated in my experience, in many cases, with repeated retention of urine of a temporary character, in several instances producing more or less atony of the bladder. Here, however, the muscular structures appeared not to have been impaired.

I had seen and reported cases where long-continued partial obstruction to voluntary urination was caused by the reflex influence of strictures of large calibre, as proved by the immediate and permanent relief afforded by their division and the introduction of a full-sized sound, one a notable instance where a retention of three years' standing (the bladder habitually containing two pints of urine) was relieved in a similar manner; but in all the cases there was either inability to pass any instrument through the membranous urethra, or to such a degree as to warrant the assumption that the difficulty, if not organic stricture, was dependent upon spasmodic closure of this portion of the urethra from reflex irritation. In this case, however, while there was, from time to time, much annoyance from such cause during catheterization, yet, as a rule, a 20 F. catheter was readily passed into the bladder, while at no time could a drop of urine be passed voluntarily.

The complete removal of these strictures was advised, with the distinct understanding that while a complete restoration of the urethra to its normal calibre might restore the urinary function, yet it was not improbable that some condition at the vesical neck was the chief cause of the trouble, and if not relieved by the internal urethrotomy a digital exploration of the bladder through perineal section would be required.

On June 1, 1885, Mr. M—— was etherized, his strictures thoroughly divided by dilating urethrotomy, and a No. 32 solid steel sound passed, without force, well into the bladder. The urine was drawn by catheter, as usual, and a No. 32 sound was passed through the urethra as far as the bulb every other day for a week after the operation. A few drops of urine had, from time to time, passed involuntarily during a passage from the bowels after the third or fourth day. On the morning of the eighth day, the urine having been allowed to accumulate until some distention of the bladder was recognized, the attempt to urinate was made; a few drops of urine only responded. This, however, gave a distinct sense of relief, but the remainder required to be drawn with the catheter. Although disappointed at the result, the patient, whose constant brooding over his trouble amounted almost to a monomania, was comforted by a rapid improvement in his general health and in his mental condition, which began immediately after the operation. The ability to void a few drops of water while at stool was the only approach to an improvement in the urinary function which had been attained by the operative measures; and it was evident that the cause was not in the urethra, but in the bladder. It was determined, however, to delay any further operative measures until the autumn, when, if the difficulty still remained, and his general condition seemed to warrant it, the digital exploration of the bladder through the perineum should be made.

Mr. M—— returned early in October, four months after, in excellent condition; but he had had no voluntary passage of urine, except the few drops when his bowels were moved. His sexual powers, which had been greatly impaired before the operation, were fully restored, and he had only the necessity of passing the catheter once in six hours, as against once in four hours previous to the urethrotomy. His urine was examined and found to be normal.

On October 9th Mr. M—— was etherized and the perineal section performed, Dr. L. B. Bangs, Dr. Norris, and Dr. W. K. Otis assisting. Introducing my finger through the perineal opening, I was unable to detect any abnormal condition in the prostate or in the bladder, which was, by means of bimanual touch, thoroughly exposed in every part. The only part that even suggested any further interference was an unusual tightness at the vesical orifice, notwithstanding the thorough dilatation which it had undergone, and this was not, however, considered to require any further operative measures. A tube was introduced and retained for the next five days, when, on removing it, no urine passed through the sound or through the penis. Complete retention occurred, which was relieved by the passage of a catheter through the wound, twelve ounces of urine being withdrawn. With a Davidson's syringe I subsequently introduced water up to fourteen ounces through the tube, without producing any desire to urinate, or any tendency to flow out through the wound or urethra. My urethrometer was introduced through the perineal opening into the bladder, turned up to 45, and withdrawn without resistance. It was then evident that a faulty action of the muscles of the vesical orifice had in some way produced the obstruction. On the previous exploration no organic obstruction like a bar could be detected. It was determined to make a further digital examination under the local influence of cocaine. This was accomplished without difficulty, and with but little pain; nothing new was recognized—the slight constriction at the vesical orifice previously noted was again detected, and it was determined to incise the constriction at that point. This was effected on introducing a straight, blunt bistoury through the perineal wound and dividing the tissue, guided by a finger in the rectum; until, upon a reintroduction of the finger into the bladder, no sense of constriction could be felt at the orifice. The tube was then replaced. There was no constitutional reaction. Forty-eight hours after the operation, for the first time since his original retention, two years previously, Mr. M—— felt a natural desire to urinate, and a few drops of urine were passed through the penis. During the entire period since the commencement of his trouble the call to urinate was only through a sense of distention, which, if not responded to, was soon followed by a pain over the pelvis. On removal of the tube, urine now leaked through the perineal opening.

The day following, October 21st, the patient passed with natural sensation ten ounces of urine through the penis. From this time he passed his urine for a few days about equally through the perineal opening and through the penis, until after a couple of weeks, the perineal wound rapidly healing, the introduction of a catheter was again required, as he could not fully empty his bladder voluntarily, having always from two to four ounces of residual urine. He was advised not to make any straining effort, but in order to completely prevent this he was to use the catheter regularly for at least three or four months. Iron and strychnia internally. By November 30th he went to his home in fair general condition, using his catheter faithfully, but mentally much disturbed that his hopes of being able to void all his urine voluntarily were indefinitely deferred.

I heard nothing from the case until December, 1886, a a little over a year after, when I received a letter from

Dr. B. stating that our patient had recovered completely from his urinary troubles and was in excellent health and spirits. He went along worrying and using his catheter for several months after returning home, getting finally into a state of hypochondriasis—complaining of inability to walk and of various discomforts. His physician sent him abroad for a few months, but he returned in the same condition. Being then unable to find any real cause for his alleged suffering, his physician then insisted upon his getting in his carriage and driving about, although the temperature was considerably below zero. He at once improved. Finally he was induced to ride on horseback, and within a very short period the doctor states that our patient had found himself able to fully empty his bladder voluntarily, and from that day to the present has been able to do so, as was reported to me by letter dated April 22, 1886, thus, "Mr. D. is as well as he ever was in his life."

The manner in which the original retention of urine occurred in the foregoing case points clearly, it appears to me, to spasmodic closure of the membranous urethra as the immediate cause, apparently due to the presence of anterior strictures of large calibre. Speaking of this condition, Esmarch says:[1] "My experience enables me to state that spasm of the urethra occurs frequently, and is often, if not principally, the cause of retention of urine."

The direct result of the retention was not to cause a general atony of the bladder, but a disability of the muscular structures in the vicinity of the vesical neck alone.

The chief diagnostic point in the recognition of atony of the bladder, according to Sir Henry Thompson, is the "diminished power of discharging the urine after a catheter has been placed in the bladder." In this case the power to increase the stream under such circumstances was normal, except when the bladder was nearly emptied. A localized instead of a general atony was present, and under conditions that would seem to indicate that this is the form of accident which most commonly occurs when a sudden temporary over-strain is the recognized cause of interference with voluntary micturition.

The contents of the full bladder, when acted upon by the detrusor muscle as a whole, reinforced by the diaphragmatic and abdominal muscles, appears to bring the greater force to bear on the bas-fonde; and if the pressure be so great as to cause over-distention, it would be most likely to occur in the greatest degree at this point.

According to Esmarch, "the outermost longitudinal layer of the detrusor muscle passes vertically into the prostatic ring, and consequently opens the ring as soon as the detrusor contracts over the liquid ball within the bladder. The urine now enters through the prostate into the membranous portion, etc." Here, however, the condition which we call spasmodic contraction of this portion of the urethra arrests the progress of the urine, and the chief strain then falls upon the muscular fibres, which in a normal condition serve to open the vesical orifice. These, too, being attached vertically to that orifice, the force would act directly upon it, and here the atony would be most likely to occur, causing a more or less permanent disability of the emptying power of the bladder. The anterior portion of the detrusor, not having been subjected to such a degree of over-strain, might by its superior tonicity cause a change in the situation of the orifice so as to form an additional barrier to the outflow of urine, which would be increased by voluntary effort to empty the bladder. The operation of incising the vesical neck, as in the case reported, it appears to me, would serve to correct in some degree the disturbed muscular relations of the parts; but chiefly to diminish the resistance of the so-called sphincter vesicæ, and thus make the action of the detrusor more effective, both resulting together in an immediate partial restoration of the function of urination, which as the detrusor gradually gained strength through the rest afforded by the long-continued catheterization, finally brought about a restoration of the voluntary power of emptying the bladder.

The suggestions which, in reviewing the foregoing cases, appear to me most salient are:

1. The necessity of appreciating the fact that slight urethral contractions, at any point from the meatus to the bulb, are a possible cause of retention of urine, through reflex irritation, and should enter into the consideration of such cases, especially in elderly subjects, whenever such contractions are known to exist.

2. The importance of an early recognition and relief of an acute retention by catheterization.

3. That localized atony at the base of the bladder may be present in sufficient degree to wholly prevent voluntary urination, while the contractile power of the superior portion remains practically undiminished.

4. The understanding that the failure to relieve, through the removal of sources of reflex irritation which might be considered sufficient to produce and perpetuate the spasm of the muscular urethra, should suggest the possible relief, even in long-standing cases, which may be afforded by an incision of the vesical neck.

5. That any local or general treatment which may be adopted independently of the removal of the cause upon which it depends is of but little avail for permanent cure.

6. That a period of several months of freedom from the cause producing it must not be considered too long to wait for recovery from over-strain or atony of the bladder.

[1] Ueber harnröhrenkrampf, Arch. f. Klin. Chir., Berlin, 1879, xxiv., 589-665.

A PLEA FOR THE MORE GENERAL USE OF THE NITRATE OF SILVER IN THE DEEP URETHRA, WITH AN IMPROVED INSTRUMENT FOR ITS APPLICATION.[1]

By E. L. KEYES, M.D.,

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Inflammatory troubles and irritative disturbances about the deep urethra and the neck of the bladder are to the patient disproportionately offensive, if the subjective annoyance is weighed against the actual gravity of the affection, and to the surgeon often unsatisfactory, because the ordinary methods of treatment are usually slow, uncertain, and at times totally ineffective. I think the above statement is not too broadly drawn.

Our general rules of treatment are, for irritative disorders, alkalies, diluents, diet, the sound, moderate anodynes, the correction of sexual irregularities, and the division of points of narrowness along the anterior urethra. For acute and chronic inflammatory and suppurative disorders we use alkalies, diluents, diet, rest, stronger anodynes, sometimes the balsams internally, and perhaps blisters to the perineum. Local treatment, except the sound, is considered totally ineffective in irritative disorders; it has to be used with great caution in subacute inflammatory conditions, and its employment is commonly interdicted in the acute stages of a given disorder—gonorrhœal or otherwise.

In many of these conditions, and their number is very great, and in others of a sexual sort, such as pollution, spermatorrhœa, lack of sexual vigor, nervous impotence, imperfect erectile capacity, and the like, I have of late years derived such signal advantage from the use of nitrate of silver in the deep urethra, that I feel impelled to lay an outline of the facts before you and to show the instrument upon which I have come entirely to depend. I think I may say that in customary office-practice at the present day my average employment of the nitrate of silver in the deep urethra is greater than the use of any other one single means of treatment of urethral disease, and my success with the method, although, of course, far

[1] Read at the meeting of the American Association of Genito-Urinary Surgeons, May 17, 1887.

from universal, is greater than that which I have derived from any other one means in the management of similar disorders.

I think it necessary to make this statement because I find a wide-spread fear in the profession in America regarding the use of nitrate of silver in the urethra. No less than two members of this Association have declined to use deep urethral nitrate of silver injections upon patients in whom I had already successfully instituted a course of treatment by that means, objecting on the ground of a fear of present or future harm to the patient, if the course were followed out, and in each instance they have advised the patient against it. This same experience at the hands of other surgeons outside of this Association is to me a matter of very common occurrence.

I may state here that I have been almost constantly using the nitrate of silver in the deep urethra for the past four years. I believe it safe to estimate that I have administered no less than three thousand injections upon private patients in my office in that time. I have never seen any harm come of it more than a temporary local irritation lasting a few days, occasionally a show of blood, and one very moderate attack of epididymitis, which possibly was produced by one of my earlier injections. At the hands of my assistants I have seen one case of cystitis and two of swelled testicle caused by it, while they (the doctors) were yet young and inexperienced in the use of the method. These remarks apply only to the last few years, since I have used the instrument of Ultzmann and the one of my own construction, which is a modification of Ultzmann's instrument.

In former days, when I used nitrate of silver injections with old-fashioned instruments I caused considerable havoc and probably more inflammatory disturbance than I cured, so that I gave up the use of deep urethral medication almost absolutely, and it is only upon taking it up again with more knowledge, more care, more sense, I hope, and better instruments, that I have obtained results of what I consider great excellence. I have never gone above the strength of a ten per cent. solution—forty-eight grains to the ounce—except in one instance of nocturnal pollution, and I rarely use a solution stronger than ten grains to the ounce, and usually a much weaker one.

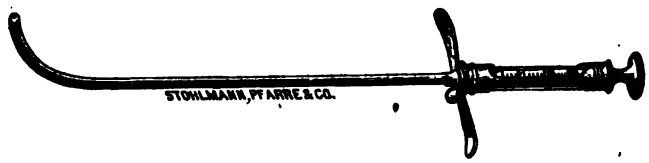
The maladies in which I have had the greatest success are: Gonorrhœal cystitis, acute and chronic; ordinary irritability of the bladder; acute or chronic suppurative inflammation of the deep urethra, with or without surface prostatitis; double relapsing epididymitis, due to the foregoing cause; tendency to relapsing cystitis in connection with large prostate; prostatorrhœa; spermatorrhœa, with abnormal deep urethral sensations, often accompanied by oxaluria, depression, melancholia, etc.; nocturnal pollutions, with apparent lack of sexual vigor; nervous impotence. These cases are sometimes rebellious to this as to all other treatments.

It is proper to state that the treatment does not suit all cases of each of these maladies. On the contrary, cases occasionally turn up which are not at all benefited by this treatment, and even cases which are positively harmed by it. Their number is very small. I never decide to use the treatment in a given case until I have made one, possibly two, tentative injections. If they are well borne and no disturbance follows, even if no good results, I push the treatment, still tentatively. If good is to come of it the fact is apparent after three or four injections, sometimes after the first. The method I employ is always the same. It is based upon a theory which I shall first set forth.

The instrument I use is like Ultzmann's in being open only at its tip. I have seen other instruments so constructed (that is, with one opening only, and that at the tip), but this form, as you know, is not the usual one, most instruments being perforated with a certain number of minute holes or slits for a given distance from the tip, or terminating in a bulb which is variously perforated.

Ultzmann's instrument has, in my opinion, only four defects—the length of the shaft, ample in the vast majority of cases, is sometimes scant in big-bellied old men; the mark upon the hard rubber to show the direction of the tip is not definite enough; the coupling between the syringe proper and the long nozzle is unnecessary, likely to get out of order, and liable to cause the operator to soil his hands; the syringe is flimsy, constantly becoming uncemented at its lower junction. Outside of these minor defects, I consider Ultzmann's syringe perfect.

My own changes have been to meet these requirements. The shaft is seven inches long, with moderately



long curve; the size, 13 French. I have a shorter instrument with different curve for young, small, thin persons. The whole instrument is metal and solidly constructed in a single piece, making leakage impossible and a giving way of any part of the syringe out of the question, unless the piston-packing dries or the glass breaks. I have wide lateral wings, which greatly facilitate the easy use of the instrument, and a pronounced indicator to show the direction of the curve. The metal out of which the long nozzle is made should be pure silver—to prevent decomposition of the solution of nitrate used, which otherwise continues to take place for a long time, until the inside of the tube has become thoroughly coated with the black precipitate, which is at first thrown down if the tube is made of German silver. This coating is liable to flake off in German-silver instruments and clog the tube. The syringe proper may be as well made of German silver. The cost of the pure silver tube is moderate.

The theory upon which I have used the instrument is this. Deep urethral inflammation, when it gets past the hole in the triangular ligament, does not yield to injections of the anterior urethra, because the injected fluid does not penetrate deeply enough. The same power of the cut-off muscles which prevents urine from getting out of the bladder (against one's will) also prevents fluids thrown from the outside from entering the bladder, unless considerable force is used, a violence paid for in some instances by inflammatory reaction. But the passage of an instrument, even very gently, through the deep urethra is not devoid of risk, and the less deeply it is inserted the better for the patient. With an instrument of this kind it is only necessary to simply enter the front part of the membranous urethra. Two or three minims of solution there deposited diffuse themselves backward over the entire membranous and a portion of the prostatic urethra, and do as much good, in my opinion, as if a quart had been used, and far less harm in the way of setting up irritative and inflammatory reaction or the possibility of exciting disturbing complications.

This is the amount of injected fluid used, and the position in which I place it in all the conditions treated, except gonorrhœal (or other suppurative) cystitis of the neck of the bladder. In the latter instance, I inject in the same way from just barely within the beginning of the membranous urethra, but I use more of the injected fluid, generally five minims, occasionally even a little more. This amount diffuses itself backward, and appears to do all the good possible, with no harm. This I consider to be the great advantage of using a syringe open at the tip. By its employment and simply introducing it just within the membranous urethra the whole bladder may be injected, if it is so desired, or as much or as little of the very seat and focus of the irritative part of all the disorders situated in this region, namely, the middle and back parts of the membranous urethra. And this can be

general tuberculosis, with wound ununited. It is probable that in properly prepared patients, without organic disease, the mortality will be nothing.

Dr. D. Hayes Agnew, of Philadelphia, said we cannot commit ourselves positively to any one operation. The median operation is undoubtedly the safest operation through the perineum. The only damage likely to be done is in extraction; but this can be avoided by nicking the neck of the bladder, which admits distention to almost any extent. Where the stone is large, and yet is one which should come through the perineum, an incision may be made on each side. Drainage is more readily effected by the perineal operation.

Dr. J. R. Weist, of Richmond, Ind., had performed the medio-bilateral operation in eight cases, all of which recovered. With one exception all the patients have been old. From the accounts of the supra-pubic operation given yesterday, he inferred that the operation is more difficult of performance than the one described by Dr. Briggs.

Dr. H. H. Mudd, of St. Louis, stated that his first operations were performed by the perineal method, with good results. He then began the use of litholapaxy, which, in the majority of cases, takes the place of the perineal operation. The supra-pubic operation is of service for the removal of certain large stones, and for exploratory purposes. In considering this operation it must be borne in mind that the existence of contracted bladder with adhesions will render the supra-pubic operation difficult or impossible. Instances in which this condition was present were related.

Dr. J. Collins Warren, of Boston, stated that during the past year he had seen two cases of the supra-pubic operation, both in the practice of others. One was for stone and the other for tumor. There seemed to be no difficulty in the operation. Both cases recovered without a bad symptom.

Dr. Theodore Varrick, of Jersey City, had removed through the perineum a stone weighing seven ounces and two scruples. There was no perceptible laceration, and the boy recovered completely.

Dr. David Y. Yandell, of Louisville, had performed ninety-two operations by the perineum, eight by lithotrity and six by litholapaxy. It did not seem to him that the supra-pubic operation was an easier or better one than those which he had mentioned. There were seven deaths from the lithotomies. In none of the cases was there any return of the stone. In the eight lithotrities there was a return of the stone in two cases. In the six Bigelow operations there was a return in two cases.

Dr. John B. Roberts, of Philadelphia, considered the high operation certain to be a very important one. If we wish to make a free exploration of the bladder, the high operation is better than the one through the perineum. In cases of stone operated on by a surgeon without special experience in this direction, the supra-pubic operation is the safer. With reference to Dr. Packard's suggestion to treat retention of urine from stricture by supra-pubic cystotomy, he considered this too serious a step to take in the first place. His view was that persistent efforts should be made to introduce a filiform bougie which will drain off the urine. Simple aspiration above the pubes will give a chance for the passage of an instrument through the urethra in two or three days.

Dr. J. E. Michael, of Baltimore, said that supra-pubic aspiration seems to be all that is necessary for retention due to stricture or prostatic disease, and, under proper precautions, is safe. In prostatic cases the use of a soft catheter will accomplish all that can be done, unless some radical operation is attempted. As to the advisability of the supra-pubic operation for exploration, for some cases of prostatic enlargement, and for exceptional cases of foreign bodies, there can be no question. It was an operation which promised more in selected cases, than any procedure with which he was acquainted, and taking all considerations into account, was not attended with special danger.

Dr. J. Collins Warren, of Boston, read a paper entitled

A STUDY OF THE PROCESS OF REPAIR AFTER RESECTION OF THE INTESTINES AND SOME OF THE COMPLICATIONS WHICH OCCUR.

The author referred to the anatomy of the wall of the intestine, calling particular attention to the thin submucous, fibrous coat, which was the strongest of the various coats of the intestine. In introducing the sutures in cases of wound of the bowel it is desirable that a few fibres of this fibrous coat be included, but care must be taken not to perforate the mucous membrane. A number of experiments made upon dogs was then described. The operation consisted in removing a portion of the intestine and a V-shaped portion of the mesentery, and then bringing the parts together. The Lembert suture was the one used. The dogs were killed at varying times after operation, from three to eight days. In these cases the intestines were found matted together around the seat of operation, but a current of water flowed freely through the gut. In one case the abdomen was opened a few days after operation, and this matting together of the various coils of intestine found. The intestine was replaced and the wound again closed. Six months later most of the adhesions were found to have disappeared.

Dr. Charles B. Nancrede, of Philadelphia, read a paper on

SHOULD LAPAROTOMY BE DONE FOR PENETRATING GUNSHOT WOUNDS OF THE ABDOMEN INVOLVING THE VISCERA?

Reference was made to the experiments of Wegner and Grawitz, showing that the healthy peritoneum can dispose of air, serum, bile, and healthy urine. When, however, air and putrescible fluids in greater amount than could be disposed of in a short time were introduced, decomposition occurred and septicæmia resulted. A notable exception was that living, defibrinated blood never decomposed under these circumstances. This seems to prove the truth of the suggestion of the author that the presence of fibrin-ferment, and probably its absorption, is one of the dangers of peritoneal traumatism. The ordinary micro-organisms produce no evil effects, provided the quantity of putrescible matter does not exceed that which may be disposed of in a short time. In small quantities the pathogenic micro-organisms produce no harm. Suppurative peritonitis is produced by these micro-organisms when stagnant fluids are present capable of nourishing the bacteria, when the surface of the peritoneum has been destroyed by caustic fluids, and when there is a wound of the peritoneum.

The practical application of these experiments teaches that all blood and serum should be removed and free drainage provided; every wounded surface must be coaptated; if a tube is used, the opening must be carefully guarded; the depression of the circulation present during shock must be removed, and the vascularity of the peritoneum must be kept as near the normal as possible.

When visceral wounds do undoubtedly exist the tendency of these cases is invariably toward death. Hemorrhage in itself is rarely fatal, but a very small collection of blood may be followed by fatal consequences, either through the induction of sapræmia, or by furnishing pabulum for the development of organisms productive of suppurative peritonitis. In nearly every case death is due to septic peritonitis caused by extravasated matters. Of those attacked with peritonitis ninety per cent. die within twenty-four hours. When recovery ensues the effused matter is absorbed, and a limited adhesive peritonitis glues the injured organ to the abdominal walls or to a neighboring viscus. This process is successful in about eight per cent. of the cases.

Shock and the risk of rendering a peritonitis septic and diffused, which might have remained local and simple, are the dangers of laparotomy. But as we have the

power of rendering the inflammation resulting from the manipulations innocuous, shock is practically the only result to be dreaded.

If these facts and the deductions from them be true, all ball wounds of the abdomen involving the stomach, intestines, bile, or urinary bladder should be treated by suture or by resection and suture; injured omentum should always be excised, and the serous surfaces carefully sutured. Wounds of the liver and pancreas are to be treated in the manner to be described. A wounded spleen or kidney is to be removed, provided certain contraindications do not exist. Even penetrating wounds of the abdomen without involvement of the viscera are better treated by exploratory section than by the expectant method. In many instances unsuspected injuries of the blood-vessels and viscera will be found and appropriately treated. The track of the ball should be enlarged, under aseptic precautions, until it has been determined whether or not the peritoneum has been opened. Then median section should be performed to ascertain the existence of and repair any damage that may have been done. The above remarks can only apply to wounds of the anterior and lateral walls of the abdomen. When the posterior wall is involved, it is unadvisable to ascertain the fact of peritoneal penetration by direct exploration. In these cases a correct opinion is almost always difficult and often impossible without laparotomy.

Profound shock, if not due to hemorrhage, is a contraindication to operation. The surroundings should not contraindicate operation in a proper case provided the operator be expert in abdominal surgery. Most cases will do better if left to nature than they will if operated on by a bungling surgeon. If well-advanced peritonitis exists, laparotomy is contraindicated. Where there is no visceral complication, operation under these circumstances may sometimes be justifiable. Laparotomy, if done at all, should be done at the earliest possible moment that the condition will admit of it. Shock is the only thing that should delay the operation, and this should not do so if the condition is produced by hemorrhage.

In operating strict antiseptic precautions should be carried out. The incision should always be median, extending from a short distance above the umbilicus to two inches above the pubes. Unless there be free hemorrhage the small intestines should be carefully gone over, keeping them constantly enveloped in towels wrung out of hot water. Afterward the stomach, spleen, kidneys, bladder, etc., must be carefully examined. The source of a severe hemorrhage must at once be sought after. Wounds of the bowel should be secured with the Lembert suture and dusted with a little iodoform. Wounds of the liver, if occupying its free border, should be coaptated, if possible, with dry aseptic catgut, which will soon swell and fill the track made by the needle. If this cannot be done, the hemorrhage possibly may be arrested by the thermo-cautery, or if the bleeding is free, the wound should be plugged with an iodoform gauze tampon. If at the close of the operation the bleeding is almost completely checked, the cautery may be used as a further protection, and the tampon removed. If, however, the bleeding is still free, the tampon should be replaced and allowed to remain permanently. Wounds of the pancreas, spleen, and kidneys are to be treated in a similar manner. If these measures fail the spleen or kidney is to be removed. Wounds of the bladder had better be united with dry catgut. Contused portions of the bowel should be excised. Wounded or contused omentum or mesentery should also be removed. In removing a portion of the bowel the cuts should correspond to the distribution of a large mesenteric branch. Should the pulse fail during the operation, flushing the abdominal cavity with hot water is often of service. The peritoneal toilet is most quickly and effectively made by irrigation with warm sterilized water and subsequent removal with sponges. Wounds of the peritoneum should be united. In closing the abdominal cavity, the peritoneum should be sutured with fine silk or catgut. The muscular aponeurotic and cutaneous structures should then be united with strong silk. The wound should be dusted with iodoform, and the dressing completed by the application of a pad of absorbent cotton and a flannel bandage.

Alimentation should be carried on by the rectum for forty-eight hours when possible. Where peritonitis comes on after the operation, the treatment will depend upon whether it has developed rapidly or gradually. In the former case there is often evidence of shock from vasomotor paresis, and in these cases small doses of morphia with atropia will be of service, while large doses of opium may prove fatal. This should be continued until pain is relieved and the patient falls into a quiet sleep, from which he is readily aroused. In the latter stages of peritonitis one or more hypodermics of atropia will at times save otherwise hopeless cases. For the control of the vascular processes involved in peritonitis we have two powerful measures in the ice-coil to the abdomen and in the use of leeches if applied early and the patient has not lost much blood. If the temperature continues to rise, despite treatment, it is probable that ptomaines are being absorbed, producing sapræmia. In such cases, irrigation with safe antiseptic fluids is indicated.

(To be continued.)

Army and Navy News.

Official List of Changes in the Stations and Duties of Officers serving in the Medical Department, United States Army, from May 8 to May 14, 1887.

ALEXANDER, C. T., Lieutenant-Colonel and Surgeon. Granted leave of absence for four months, with permission to go beyond sea, to take effect May 23, 1887. S. O. 105, A. G. O., May 7, 1887.

HARVEY, P. F., Captain and Assistant Surgeon. Granted leave of absence for four months, with permission to go beyond sea, to take effect June 10, 1887. S. O. 105, A. G. O., May 7, 1887.

BIART, VICTOR, Captain and Assistant Surgeon. Ordered for examination by Army Retiring Board at Fort Leavenworth, Kan. S. O. 107, A. G. O., May 10, 1887.

ELBREY, F. W., Captain and Assistant Surgeon. Ordered for examination by Army Retiring Board at Washington, D. C. S. O. 109, A. G. O., May 12, 1887.

Official List of Changes in the Medical Corps of the United States Navy for the week ending May 14, 1887.

GRAVATT, C. U., Surgeon. Detached from U. S. S. Michigan.

LUMSDEN, G. P., Passed Assistant Surgeon. Ordered to the U. S. S. Michigan.

ASHBRIDGE, RICHARD, Passed Assistant Surgeon. Detached from the Naval Academy and ordered to the Practice Ship Constellation.

STREETS, THOMAS H., Passed Assistant Surgeon Promoted to Surgeon.

THIRST IN YOUNG INFANTS.—It is a mistake to suppose that because milk is a liquid food it is at the same time a drink which is capable of satisfying the thirst of infants. Although milk appeases hunger, it makes thirst more intense after it has remained some time in the stomach and digestion of it has begun. It is thirst which causes healthy, breast-nourished infants to cry for long periods of time in many instances. There are many cases of indigestion due to weakness or insufficiency of the child's gastric juice which would be greatly benefited or even cured if the child were allowed an occasional drink of water.

done without passing any instrument into this middle and back part of the membranous urethra, the position of greatest danger, in my opinion.

In treating neuralgic, irritative, and deep urethral inflammatory disorders, I endeavor to inject while the patient holds water in his bladder, preferring to have no traces of urine at the point to be injected (on account of the decomposition of the nitrate solution which it causes). In gonorrhœal cystitis when there is much pus, I prefer to ask the patient first to urinate, so as to clear away the pus and leave the bladder empty, that a drop or two of the injected liquid may reach the bladder just at the urethral orifice. The greater amount of injected fluid in these cases more than compensates the decomposing action of the urine. Under no circumstances do I first wash out either the urethra or the bladder.

The seat of greatest sensitiveness about the neck of the bladder, and the focus of the disease in gonorrhœal cystitis, is the back part of the membranous urethra. It is at this point that the ordinary sensation of a desire to urinate is experienced by the patient; it is here that the same sensation is called out during the passage of a sound. This sensation is not felt at the beginning of the membranous urethra. As the nozzle of the syringe enters this region no complaint of a desire to urinate is usually made. In inflamed conditions it is made. In gonorrhœal cystitis and in the other conditions I have mentioned, a few drops of a nitrate of silver solution, placed accurately in the membranous urethra, in many instances promptly turns the whole course of the malady, and even in grave cases of serious inflammatory disease it often comforts when it does not cure.

The treatment often fails in irritability of the vesical neck due to enlarged prostate; it often seems to fail in directly influencing deep urethral spasm; and it appears to aggravate cancerous and tubercular trouble at the neck of the bladder. Guyon [1] has observed this same peculiarity. Indeed, he has gone so far as to consider that failure of nitrate of silver to do good is a differential diagnostic point between cystitis of the neck due to cancer or tubercle and the same affection dependent upon other causes. My own experience teaches me to doubt the value of the method when the cystitis is due to traumatic causes, notably the cystitis following sometimes upon internal urethrotomy. The method is most often effective where the surface tissues only are involved, there being no considerable thickening, inflammatory or otherwise, about the urethra. I make a fresh solution for each case injected—using a standard ten per cent. solution, and diluting it suitably in a minim-glass. I generally commence at about one grain to the ounce, and work up, making the intervals two to five days longer as the injections grow stronger.

The desire to urinate usually comes on sharply a few moments after the injection is placed. I allow patients to yield to this, but urge them to hold back the second call as long as is reasonably possible, and particularly not to strain after urinating.

The treatment of deep urethral and vesical troubles by instillation of the nitrate of silver and by a method somewhat similar to the one I have described, but, I believe, less gentle and more liable to be attended by risks, has for some years been advocated in Vienna by Ultzmann, his admirably concise and practical ideas being set forth in this country in a translation of his little monograph on "Pyuria" by W. B. Platt,[2] of Baltimore, and for fifteen or twenty years in France, by Guyon, who uses a bulbous-headed, soft bougie for his instillations, the perforations for the passage of the fluid being behind the shoulder of the bulb. His ideas about the efficacy of the treatment and the manner of using the bulb have been quite recently set forth, both for the treatment of disease in the urethra and the neck of the bladder, in the *Annales des Maladies des Organes Génito urinaires.*[1]

I have experimented with other substances for deep urethral injection, such as hydrastin, sulphate of zinc, permanganate of zinc, glycerole of tannin, hydrochlorate of cocaine, sulphate of copper, but I have as yet little to say in favor of any substance except the nitrate of silver.

I append the short history of a few illustrative cases, some of the best and most typical out of many examples, in justification of what is written above:

Case I. *Acute gonorrhœal cystitis.*—In November, 1884, a young man, aged twenty-eight, acquired a gonorrhœa, for which his physician administered injections. In a few days acute bladder-symptoms set in. At the end of the fourth week I was called, to find the patient in a pitiable condition, pale, sleepless, depressed, thin, without power or inclination to eat, taking herb-infusions, alkalies, and twelve grains of opium a day, urinating every half hour, night and day, a mixture of urine, pus, and blood, with an intensity of pain following the act which it was distressing to contemplate.

I cut down the opium at once, administering a hypodermic injection in its place, and a deep urethral injection of nitrate of silver, gr. iij. to ʒ j., put the patient on a milk-diet, and ordered a cathartic. A few hours after the first injection improvement commenced. Ten injections were given at intervals varying from two to five days, and at strengths varying from two to five grains to the ounce. Improvement was uninterruptedly continuous from the first injection, and at the end of the fourth week the patient reported at the office, well, with perfectly clear urine. This is the best result I believe I have ever attained. The patient was so ill that his friends confidently expected him to die. His recovery was brilliantly prompt and perfect, and his bladder has remained sound ever since.

Case II. *Subacute gonorrhœal cystitis.*—A young man, aged twenty-three, came to my office, March 27, 1885, complaining of frequent urination, with pain during and after the act. He had been suffering for four weeks, in spite of treatment and the use of opium. His symptoms began shortly after the commencement of a gonorrhœa in the shape of urgency of urination with pain and the appearance of bright blood after the urinary act. The urine was thick with pus. In my office I injected the deep urethra of this patient with a solution of nitrate of silver two grains to the ounce. After three days I used a five-grain solution, three days later a solution of seven and a half grains, in a week a ten-grain solution, and at the next visit the patient reported himself practically well, urinating only four times in the twenty-four hours. This case also was admirably prompt in its response to treatment.

Both these cases are exceptionally good ones. I do not cite them as average specimens.

Case. III. *Irritability of the bladder.*—A gentleman, aged thirty-four, consulted me in October, 1882, for frequent and painful urination, night and day. He had to get up twice at night, and was tormented excessively by day at times; at other times his intervals of urination were nearly normal. Exercise and fatigue, nervous worry, and bad weather, all aggravated his trouble. He was married, and of temperate habits. His urine was acid, 1.027, contained a little pus, no blood, and enormous quantities of crystals of the oxalate of lime. His urethra was ample, except for a linear stricture at three-fourths of an inch, admitting 15 F., with difficulty. The deep urethra was exquisitely sensitive to the sound.

I cut the anterior urethra to 30 F., and five months later the patient reported great improvement, but he was not satisfactorily well, and such improvement as he had was ascribed rather to passing instruments through

[1] Annales des Mal. des Org. Génito-urinaires, vi., p. 345, June, 1884.
[2] New York, D. Appleton & Co., 1884.

[1] 1883, i. i., p. 613; and 1884, i., iii., p. 330.

the membranous urethra than to the urethrotomy. He suffered occasional relapses, in one of which, in October, 1885, I injected his deep urethra with nitrate of silver three times at intervals of three days, once with a five-grain, once with a six-grain, and once with a seven-and-a-half-grain solution.

This entirely relieved him, and he stated that he never had had anything do him so much good. He remained well for seven months, when overwork and mental worry, in the spring-time, caused slight relapse, which was again at once relieved by a six-grain solution. This was a year ago. The patient returned to his home in the country, and I have not seen him since.

This patient was essentially neurotic, oxaluric, overworked, over-anxious, and I have on that account selected him as an illustration. His relapses are accounted for by his nervous peculiarities. The relief afforded by the treatment in his case was most striking. I might describe a number of ordinary cases of common vesical irritability, but space does not allow. All are not cured by this treatment; a few cases are not helped at all; but most cases are materially relieved; many are cured.

Case IV. *Acute deep urethral inflammation.*—In November, 1886, a youth, aged nineteen, got into a serious condition of general urethral inflammation along the entire length of the canal. The discharge anteriorly had been suppressed by irrigation, so that the deep urethra suffered mainly. Indeed, the bladder became moderately involved, so that for a few days there was urgency and precipitancy of urination, blood once, and always a considerable amount of pus in the urine. The bladder symptoms moderated promptly under deep urethral nitrate of silver injections—from five to twelve grains to the ounce—but the flow of pus forward continued, the meatus was puffed up and livid, the frenum and foreskin œdematous, distress was complained off in the perineum, and the urine was loaded with pus, although the symptoms of cystitis had ceased.

This case was obstinate, but yielded entirely to deep urethral injections, varying from three to twelve grains to the ounce, at intervals of about five days, continued somewhat over a month. Poland water was used freely, a mild anterior injection which the patient used himself, and a little balsamic medication. The urine became as clear and sparkling as possible, and all urethral discharge—even the little shreds of pus in the urine—totally disappeared.

Case V. *Chronic deep urethral inflammation.*—A gentleman, aged thirty-five, came to me in November, 1885, complaining of gleet. Eight years before, for a persistent discharge after gonorrhœa, a surgeon had cut his orifice, and afterward had cut him for two alleged strictures of large calibre farther back. He improved, but did not get quite well. Then a spontaneous discharge appeared, which disappeared in six months under injections. Then other discharges appeared spontaneously, and finally one testicle swelled. Then another discharge, and his surgeon wanted to cut him again—he had already been cut to 39.

In this condition, with a moderate discharge coming partly from the anterior, but in great part from the deep urethra, the patient applied to me. During five weeks he took a mild anterior injection himself, and I injected the deep urethra six times, the strength of injection varying from one to ten grains in the ounce. This cured him—so that he was better than he had been for several years. This spring he had a moderate relapse, which again promptly yielded to the deep urethral employment of the nitrate of silver.

Case VI. *Double relapsing epididymitis due to deep urethral inflammation.*—A married man, aged thirty-one, came to me in July, 1885, with double swollen testicle. He stated that during his youth he had had gonorrhœa most of the time. At the age of twenty-six, under treatment by the endoscope, he got well and married. A year later first one, then the other, testicle swelled, and he had had shreds of pus in the urine and occasional urethral discharge and trouble in the testicles most of the time since. When I examined him both testicles had been swollen for some time; the right was getting better, the left worse; he had a gleety discharge and much pus in the urine; bladder symptoms were moderate.

I injected the deep urethra, as in the foregoing cases, at a strength varying from one and a half to ten grains in the ounce. Both testicles improved promptly and were well, so far as active symptoms were concerned, in less than two weeks. In five weeks the discharge was cured, and the bladder symptoms overcome. The patient remained well for eighteen months, when he returned for a commencing mild urethritis, said to be due to leucorrhœa in his wife. The testicles were well and had remained so since the deep urethral injections.

Case VII. *Vesical irritability due to enlarged prostate.*—A gentleman, aged fifty-five, came to me in July, 1885, complaining of frequency of urination, every three hours by day in summer, every hour in winter, and of being more or less disturbed at night. The urethra was free from constriction, the prostate double its normal size. During the past his winters have been very distressing, so that, to escape his irritability, he had been obliged to pass the winter in the South. He had been treated by the use of the sound and internal medication without success. I gave this gentleman deep urethral injections of the nitrate of silver, about once a week for three months, varying the strength from one up to nine grains in the ounce. The result was entirely satisfactory. His pain and feeling of fulness in the perineum almost disappeared. He gave up his projected trip to the South in the winter of 1886, and his intervals of urination, even in the cold weather, became prolonged to three and a half hours by day, while he got up only once at night. This condition satisfied him, and during the winter just past I have had no occasion to repeat the injections.

Case VIII. *Oxaluria, with prostatic neurosis.*—A married gentleman, aged thirty-one, suffering from premature ejaculation, imperfect erections, and fulness, throbbing, with dull pain in the perineal region and over the pubis, applied to me in November, 1885. His urine was heavy, 1.030, and full of crystals of oxalate of lime. His general health was good, but his local sensations seemed to incapacitate him for work. His urine contained a few shreds of pus from the urethra. I ordered his medical attendant to use the deep urethral injections of nitrate of silver. Only one was administered. It was probably badly done, for it set up mild urethritis, and the patient declined to make further trial of the method. He became gloomy and despondent, and went for several months to a sanatorium for rest. This relieved his mind, but did not cure his local sensations.

I then personally instituted a course of deep urethral injections in March, 1886, and carried them out by the aid of Dr. Alexander, my then assistant. Improvement commenced at once, and has persisted, so that at present the patient is practically well, fully able to attend to business, and almost free from his local sensations and sexual defects. He still comes up for an injection about once a month, but his intervals are getting longer, and he proposes to live in the country this summer and give up all local treatment.

I might multiply cases showing the value of this means of treatment, but I think the foregoing will suffice to justify the claim I make for a more extended general application of this method in cases of inflammatory and irritative disturbances of the deep urethra and prostatic region, including the neck of the bladder.

In cases of nocturnal pollution the influence is sometimes markedly advantageous, sometimes it fails. In these cases I often make the injections stronger, and once carried the strength up to sixty grains to the ounce, before a satisfactory result was reached. In nervous impotence and lack of erectile power the effect is often

strikingly good. In spermatorrhœa benefit is obtained, but rarely a cure, although I have occasionally in mild cases seen the spermatozoa cease to appear under a course of injections.

I must add, finally, and emphasize the fact to which I have already called attention, that although the range of applicability of the injective treatment is very wide, it is not appropriate for all cases. In some instances it fails totally, but these exceptions are a minority of all cases treated.

1 Park Avenue.

THE TREATMENT OF EMPYEMA IN CHILDREN, WITH PARTICULAR REFERENCE TO THE RELATIVE ADVANTAGES OF ASPIRATION AND INCISION.[1]

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The subject of empyema is a large one, and one of great importance, especially in children, since more than half of all the cases occur during the first ten years of life. Alongside of the greater liability of young children to this form of pleurisy we have, fortunately, another fact—viz., that the prognosis is much better at this time than later in life. This is so well established that I need scarcely more than allude to it here. It depends chiefly upon the difference in the etiology of the disease at the different ages. Thus, of 110 cases in children, collected by Simmonds, empyema followed pneumonia, the fevers, traumatism, or was idiopathic in 94 cases, while in 12 only was it associated with tuberculosis. This is in striking contrast with the well-known frequent association of empyema and tuberculosis in adult life.

It will be manifestly unfair, then, to contrast results in children with those obtained in adults.

An empyema untreated may result in recovery (1) by spontaneous absorption of the effusion, (2) by evacuation through a bronchus, or (3) by opening externally through the intercostal muscles.

That spontaneous absorption of a purulent effusion in the pleura may occur is beyond dispute; it is equally certain, however, that it is one of the rarest of terminations. I have found reported but two undoubted cases—one by Dr. G. M. Edebohls, of this city, and one by Dr. Eustace Smith. The former case was one of localized empyema; the latter was general. In both the diagnosis was confirmed by exploratory puncture. Three other cases—one by Dr. J. E. Winters, and two by Goodhart—cannot be positively accepted, inasmuch as they lack the demonstrion of the hypoderatmic needle, which alone can be regarded as settling such a doubtful point, although in Goodhart's cases the occurrence subsequently of considerable retraction of the affected side makes the probability a very strong one.

Evacuation through a bronchus and external opening were regarded by the older writers as the best that could be hoped for. With the former I have had no personal experience, and have found it extremely difficult to gather from the literature of the subject enough facts for any generalizations regarding the frequency and termination of these cases. Leichtenstern has met with six cases, with four recoveries. Wilks saw in a single year five deaths from this form of opening, although the age of the patients is not given. It is the almost unanimous opinion that pneumothorax is rarely produced by it in children, on account of the greater elasticity of the chest-walls.

To what extent may we rely upon nature to cure empyema?

Rilliet and Barthez mention 33 cases which received no surgical treatment, of which 4 recovered, 21 died, and 8 were lost sight of. Goodhart reports 8 cases, with 4 deaths. These are rather striking facts, but not more so than the following quotation from Condie's "Diseases of Children," published in 1844:

"When effusion of pus has taken place in the pleura, the case is generally hopeless; nevertheless," he adds, "we are assured that even in a child only seven years of age pus has been evacuated by an operation, and entire recovery has ensued, except some contraction of the affected side."

It is evident that the chances of recovery by nature's unaided efforts are not great.

Before going on to discuss the surgical treatment, let us consider for a moment what empyema is. Essentially, it is nothing but an abscess, the peculiarity being that the outer wall, with which we have to deal, is rigid, and the inner wall is yielding. One of the conditions of cure in every abscess is that the two walls of the cavity come into contact. This is accomplished in the chest by the expansion of the lung. The more completely and the more rapidly expansion takes place, the more certain will be the recovery and the shorter the period required. The chief obstacle to re-expansion is the organization of the lymph covering the pulmonary pleura, which binds down the lung. Every day of delay in removing the pus increases the firmness of these adhesions, and consequently the difficulty of expanding the lung fully, and prolongs the period of discharge. In addition to this condition of the pleura, we have the danger of the development of tuberculosis in the lung itself, and, further, the deleterious effects upon the system of the retention of pus in the chest.

We are now prepared to lay down the indications for treatment—viz., *to get rid of the pus, by the easiest, safest, and most thorough means, as early as possible.*

The only means we shall discuss are aspiration and incision with drainage. Puncture with a trocar, and siphon drainage through a cannula, seems to be really only an incomplete operation of incision. It cannot well be carried out in children, as it is difficult to keep the patients sufficiently quiet to secure perfect success, and as the cannula is apt to become plugged with lymph, which the exudation in children usually contains in abundance.

The advantages claimed for aspiration are as follows:

1. Its simplicity.

2. Freedom from danger. With ordinary skill and clean needles the dangers from aspiration are almost nil.

3. It does not remove the fluid rapidly, and hence allows a gradual expansion of the compressed lung. While in the case of serous effusions collapse has been known to follow the rapid evacuation of the fluid, there does not seem to be the same danger in the case of pus, so that this cannot be regarded as a point of great weight.

4. It does not require general anæsthesia. In view of the dangers of anæsthetics in these operations, this is of some importance.

5. It does not require confinement to bed. In the intervals of aspiration the child may be allowed to be up and about, if the case is not an acute one, and thus get the advantage of fresh air. This possible advantage, unfortunately, is more than counterbalanced by the danger of converting the pleural cavity into a chronic abscess-sac, by frequent tapping and prolonging the case indefinitely.

6. That many cases are cured by aspiration alone; the fluid after one or two aspirations becoming serous, it then being readily absorbed.

The advantages, except the last mentioned, are not sufficient to demonstrate the superiority of aspiration to incision. It remains, then, to discover in what proportion of cases, and in what particular variety of cases, we may expect aspiration to cure empyema.

Of 121 cases so treated, collected from various sources, mostly English and American, 23, or nineteen per cent., were cured, 6 died, and the rest came to some other method of treatment, usually incision. Of the 23 cases

[1] Read before the New York Academy of Medicine, May 19, 1887.

8 were cured by a single aspiration. The variety of the disease was noted in 13 cured cases, and in all but one the empyema was localized.

It is only just that the statistics of Branthomme should be mentioned. I have not had access to his thesis, but his cases are quoted by Moizard. Of 43 cases treated by aspiration, 18 were cured by a single operation, 11 cases by two operations, 3 cases by three, and 11 by a variable number, ranging from six to one hundred and twenty-two. The last case extended over a period of eleven months. These French statistics are quite at variance with the results published by German, English, and American writers. I present them without comment.

Aspiration has some very obvious objections:

1. By it not all the pus can be removed; there is always a residue to be gotten rid of by absorption.

2. When the exudation is divided by septa, we may empty one sac, but leave another untouched; while after a free incision the finger or a catheter may be introduced and all these septa broken down.

3. The terror of the child at the operation, in cases where it becomes a necessity to repeat it, is a very serious objection, the full force of which one can only appreciate who has had to contend with it.

4. There are certain cases to which, from their nature, aspiration is not applicable; as when the pus has become septic, when empyema is associated with gangrene of the lung, or when the exudate contains much fibrin, clots, or shreds of necrotic pleura.

5. It offers, after all, only the *possibility* of cure; by persisting in it valuable time is consumed, by which the success of incision is jeopardized, and the time of treatment prolonged, so that the patient is exposed to the dangers of septicæmia, exhaustion from long-continued suppuration, and imperfect expansion of the lung.

Incision possesses the following very decided advantages over the method we have been discussing: Its universal applicability; the fact that it enables the surgeon to explore the cavity with the finger, breaking down adhesions or septa which may prevent perfect evacuation, to remove clots and shreds of necrotic tissue, to wash out the pleura in case it may be necessary from the septic character of the pus, and to drain completely.

The admission of air into the chest and septic absorption from the wound have been regarded as the chief dangers in empyema operations. Since the thorough use of antiseptics in these cases, these objections can no longer be said to have any weight. A comparison of the results given below of simple and antiseptic incision is a conclusive argument upon this point.

The use of general anæsthetics remains to be considered. I have twice known rupture into a bronchus to take place while the patient was unconscious, and death to result from suffocation. These cases were both in adults. I have not found upon record such an instance among children; but it might easily occur in a case of long standing. The conclusion to be drawn is, that in such cases, at least, local anæsthesia should be relied upon, perhaps in all. I am not aware that cocaine has been applied to this operation, but it would seem that with it we might be able to dispense with general anæsthesia altogether. With it I am sure no more pain and fright would be produced in a child than by aspirations.

Considering the results they obtained, it is not strange that the older surgeons should have held this operation in very low esteem. Thus Astley Cooper held that it was always fatal. Dupuytren operated in 50 cases, with only 4 recoveries; and when himself suffering from empyema, refused to have it performed, saying that he "preferred to die by the hand of God than the hand of man." Diffenbach had better success; he operated in 46 cases, two-thirds of which recovered. In the above statistics the ages of the patients are not given, so that it is impossible to say what were their results in children.

Coming down to more recent times, 59 operations in children, with 8 deaths, have been collected by Blume and Simmonds, in most of which antiseptics were used to some extent. While of the latest reported cases treated with full antiseptics, I have collected records of 63 operations, with 2 deaths. Of this number, 26 successive cases were treated by Goodhart and Taylor in the Evelina Hospital, London, with one death, that being from complicating pericarditis and peritonitis.

Could anything be a more complete demonstration of the merits of this mode of treatment?

A case mentioned by Gwynne illustrates so well the necessity of complete antisepsis that we may be pardoned for introducing it.

A child five years of age was operated on for an empyema of the right side, and the wound dressed antiseptically. On the sixth day the patient pulled the dressings off, and the wound was exposed to the air for some time. On the next day the temperature rose from 98.6° to 105°; the discharge, which had been free from odor, became fetid and death occurred in a week.

I have collected 80 cases treated by antiseptic incision, in which the *duration of the discharge* was given. In 5 cases it was four months or over; these being, for the most part, cases of long standing at the time of operation. Of the remaining 75 cases the average duration of the discharge was six weeks. In 21 of these, most of which were operated upon early, the duration was one month or less.

The discharge lasted, in cases where no antiseptics were used, in 5 cases (Hobson) an average of six months; in 40 cases (Blume), where they were partially used or not at all, three to six months; in 11 cases (Simmonds) an average of eleven weeks.

The following conclusions may be drawn from this consideration of empyema in children:

1. All methods of treatment yield better results than in adults.

2. We are never justified in leaving a case to nature.

3. Aspiration holds out a reasonable prospect of success in cases of localized empyema; but a very slender one when the exudation is general.

4. If, after two aspirations at most, the pus reaccumulates and shows no tendency toward a transition to serum, this method should not be persisted in.

5. In cases of a large effusion, one aspiration may be done preliminary to the cutting operation, to avoid any possible danger which might result from a too rapid withdrawal of the fluid.

6. In all other cases a free incision should be made as early as possible, preferably under local anæsthesia, always with the strictest antiseptic precautions.

7. The operation of puncture with a trocar and drainage aims at a cure by the same means as incision; but it is not more safe and very much less certain.

8. Excision of the ribs is rarely required; never in early operations, as it appears to prolong the discharge without giving any corresponding advantages.

9. The treatment of empyema cannot better be epitomized than in the words of Wagner: "*Early incision, perfect drainage, and complete antisepsis.*"

Under this method this affection, from being one of the most fatal of childhood, has become one of the most amenable to treatment.

15 East Fifty-fourth Street.

Pruning Shears for Use in Autopsies.—Dr. T. E. Quimby, of Fayetteville, N. Y., writes: "I have been using at autopsies the 'pruning shears No. 52,' to be obtained at hardware stores at a cost of fifty cents. They sever cartilage or ribs with rapidity and ease, being vastly superior, I find, to the cartilage-knife. It is an excellent instrument as regards size, weight, strength, and finish, keeping sharp a long time."

Women are more often hungry than men, says M. Delaunay.

ACUTE EMPYEMA IN CHILDREN.[1]

By FRANCIS HUBER, M.D.,
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"Of all chest diseases in children, mistakes in diagnosis are most frequently made with pleuritis." This is particularly true of cases which, from the outset, are attended by the secretion of pus, and which have been termed acute suppurative or purulent pleurisies—acute empyema. Acute empyema is not at first a simple, and later on a suppurative, process; it must be regarded as a distinct variety, the inflammation of the pleura being severe in type and accompanied by the secretion of pus from the very beginning. Such cases are met with principally in the thickly populated districts under poor hygienic conditions. Some of the patients are, or have been, rachitical. Others may apparently be in fair health, running about as usual, and without any history of exposure or other assignable cause be taken down in a few hours with chill, nausea, or vomiting, or convulsion. The onset is sudden. The fever is high from the commencement, and varies from 103°, 104°, 105°, or over. There is marked prostration with severe constitutional disturbance. The children are restless, crying continuously.

The cough, suppressed at first, is more or less severe later on. Respiration is short and catching in the beginning; soon dyspnœa becomes more and more pronounced. Emaciation is rapid. The fever may continue for six, eight, or ten days, and then subside. The other symptoms gradually improve to a certain extent, but the little patient continues weak, pale, emaciated, and troubled with occasional diarrhœa, until the disorder is correctly diagnosed and the proper treatment instituted. The fall in the temperature is a favorable sign. In other cases the fever persists, the vital forces are seriously involved, there is rapid failure, and the case terminates fatally within ten days to two weeks. These children die from the intensity of the suppurative inflammation. The effusion, as shown by the physical signs, appears at a very early stage, and increases very rapidly. In a child eighteen months of age, the physical signs showed considerable fluid on the third day; on the fourth day a hypodermic syringe was introduced and its purulent nature established; the next day about twelve ounces of pus were removed by aspiration. In a boy eleven years of age, seen in consultation with Dr. Neufield, I removed a pint and a half on the fifth day. In another child aged eleven months about twelve ounces were taken away on the ninth day.

In some instances—I have three such in my own practice—the purulent process may be coincident with an acute pneumonia, the two going on at the same time, and it is impossible to say which occurred first.

A fourth I saw quite recently, in consultation with Dr. J. Horn, and about six ounces of pus were drawn off on the fourth day.

In another case, which I saw with Dr. Denhard, there was, at the same time, a pneumonia of the right side and an extensive purulent effusion on the left. We were obliged to postpone active interference in this case, on account of the collapsed condition, until the eleventh day.

A careful physical examination of the chest, with the early use of the hypodermic syringe, will enable one to arrive at an early diagnosis in the complicated cases.

The primary acute empyemas in children are more serious than those running a subacute course, and a guarded prognosis should be given during the first fortnight. A number prove fatal before the end of the second week. Thus I have seen four cases which terminated fatally as follows: First, aged nine months, died on the tenth day; second, aged eleven months, died on the eleventh day, two days after aspiration; third, eleven years of age, died on the eighth day, with a pericardial complication; fourth, aged eighteen months, died on the sixth day, fifteen hours after aspiration.

[1] Read before the New York Academy of Medicine, May 19, 1887.

Barthez and Sanné report that of twenty-one non-tubercular cases not operated upon, seven died in from eleven to sixteen days.

The physical signs and clinical history do not enable us to arrive at a positive diagnosis of acute empyema. We can determine the presence of fluid in the pleural cavity at an early stage; the character of the fluid, however, remains doubtful. Chills, fever, diarrhœa, and other hectic manifestations are observed in the late cases. Localized œdema on the affected side is frequently absent. The presence of a soft, fluctuating tumor in one of the intercostal spaces in a case of pleural effusion ought to lead one to suspect the purulent nature of the disease. This does not occur until a late period in the disease, though in one instance I saw it appear as early as the nineteenth day. If the quantity of fluid continue to increase in an acute case of pleuritic effusion, in spite of measures intended to promote absorption, pus is probably present. Or if in an acute pleurisy the fever be intense and the constitutional disturbances severe, the inflammatory products are very likely suppurative in character.

An absolute diagnosis, however, can only be made by an exploratory puncture with a hypodermic syringe, a large needle being used. It is a simple and safe procedure, and with ordinary care no harm can result. An early resort to puncture is warranted in view of the importance of a positive diagnosis in its bearing upon the prognosis and treatment of the case. Attention to the points developed above has enabled me to make the diagnosis as early as the fourth, fifth, sixth, seventh, ninth, and eleventh day, of the disease.

The treatment by medicinal means is symptomatic and palliative. No reliance can be placed upon measures intended to produce absorption of the purulent products. Our therapeutic resources enable us to combat special symptoms and improve the general condition with the aid of tonics, good food, and stimulants of various kinds. Whenever possible, the children should be placed under better hygienic surroundings. In the active inflammatory stage the treatment is symptomatic. Caffein, camphor, carbonate of ammonia, and other heart stimulants are particularly indicated.

An expectant plan of treatment is dangerous and ought to be condemned. "One of the large serous cavities, connected as it is with the lungs, is not only disabled, but contains a deleterious fluid which cannot remain in a closed cavity without sooner or later affecting the processes of nutrition." The amount is too large to allow it to become encysted, and nature cannot remove such quantities by absorption. We must get rid of the pus and stop the suppurating process. An empyema can never be cured unless the cavity of the pleura is obliterated by the expansion of the lung, the ascent of the diaphragm, the displacement of viscera, or the falling in of the chest-walls, or all of these together. Surgical measures only enable us to meet these requirements. The more promptly we act, the greater the prospects of cure. Not only must we endeavor to save life, we should at the same time aim to save the lung and secure to the patient the power to expand the lung fully. An early diagnosis and early resort to surgery will aid us materially in this respect.

The presence of pus being established, its removal may be accomplished by aspiration or incision. The question now arises, When shall we interfere in the early cases? Though I am in favor of early puncture in order to arrive at a positive diagnosis, I would defer aspiration until the acute febrile condition has subsided—say until the tenth or twelfth day—provided the presence of the fluid in the early stage does not endanger life in any way. In acting accordingly, I do not forget that some authorities as Castiaux, Wedal and Montard-Martin have practised aspiration in acute pleurisies (serous in character) with advantage at a very early period (second to tenth day). The two conditions are not analogous.

The shock to the system in acute purulent pleurisy is profound, the pulse is weak and feeble from the beginning. Waiting a few days, if the fluid be not excessive, allows the patients to rally and improves their condition and chances. I would not be misunderstood here, for I do not favor temporizing; it is only during the first week or ten days that I would advise a judicious delay, in order to allow the little patient to recover from the collapsed condition.

As a matter of fact, I have, on several occasions, waited for from four to seven days, and have not had occasion to regret the conservatism. On the contrary, the pulse was improved and the general condition better when operative means were employed.

Aspiration may be resorted to in the first instance. My individual preference is to puncture in the sixth or seventh intercostal space, near the posterior axillary line, a hypodermic needle being first employed to establish the presence of pus at the spot selected. As a general thing, an anæsthetic, local or general, is not required. Enough to relieve pressure may be removed, or the attempt may be made to rid the pleura of all the deleterious fluid. Too much ought not to be attempted at one sitting. If the cough becomes annoying we must rest contented with the removal of a small quantity, and further attempt can be made later on. If, after aspiration, the pus is found to be laudable and inodorous, and if it does not refill rapidly, or if the fluid at subsequent punctures becomes less and less purulent, the tappings may be repeated with fair prospects of ultimate success. In acute empyema, according to my experience, it is merely a temporary expedient and does not succeed even when employed early. Within a few days the pus reaccumulates to the same extent, or may even exceed the quantity removed. Under such circumstances more radical measures are indicated, and when I find that the physical signs, a few days later, show as much or a greater amount of fluid, the aspiration is not repeated, but the chest is incised at once. Not only do we have pus in large quantities in these cases, fibrin is thrown out at the same time, too dense and abundant to be removed through the needle. The infrequent cures after this method must, in my mind, be attributed to the presence of fibrinous deposits upon the pleural surfaces and in the pleural cavity. In several of my cases septic symptoms developed after aspiration, and upon opening the pleura the fibrin was found in a decomposed state. I do not think that the infection was carried in by the needle, for the usual precautions were taken to keep the instrument aseptic. It is probable that the fibrin interspersed with pus is decomposed more readily when the liquid portions are removed. Delafield states that the fluid in the pleural cavity, the fibrin and pus coating the pleura, and the pleura itself may putrefy, with the production of bacteria and the evolution of gases. This may take place either in a closed pleura or in one which has been opened ("Pathol. Anat.," etc., p. 213).

If the patient be cachectic, the hectic fever of a severe type, if perforation have taken place, septicæmia be present, or the fluid return quickly, or contain considerable fibrin, aspiration will fail, and we are then forced to employ the open method.

In acute empyema a simple incision an inch or an inch and a half long, with insertion of drainage-tube and antiseptic irrigation and dressing will answer.

A preliminary explorative puncture is made in the sixth or seventh intercostal space near the posterior axillary line. If pus be not found in this situation another puncture is made posteriorly, about an inch below the angle of the scapula. A grooved exploring needle is now introduced until the pus cavity is reached, and an opening sufficiently large to admit a director is then made with a bistoury knife, so as to permit the pus to escape slowly. Finally, a probe-pointed curved bistoury is introduced and the opening enlarged to an inch or an inch and a half. The edges are then held apart by means of dressing-forceps or Trousseau's tracheal dilator to permit the escape of large fibrinous masses. The drainage-tube is then introduced and the cavity washed out with an antiseptic solution, and an antiseptic dressing is now applied. In order not to wound the diaphragm, the cutting instruments are introduced but a short distance and the intercostal artery is avoided by keeping close to the upper border of the rib. General anæsthesia is not required in these cases—cocaine injected locally will suffice.

I have resorted to this plan in thirteen itstances; of this number three died—one of exhaustion, one of acute gastro-intestinal catarrh, and in the third case erysipelas set in. Of the remaining cases, one is still under treatment was one is left with a sinus secreting a few drops of pus daily, and the others have recovered with power to expand lungs freely. The youngest was aged nine months, oldest five years. The average period of treatment about seven weeks.[1] The most rapid recovery occurred in a child patient of Dr. Neufield, aged twenty-one months (rachitical and the weaker of twins). In this case the chest was incised on the fourteenth day of disease. Under injections of bichloride, and bichloride gauze and borated cotton dressing, the cavity (originally holding about one pint) was obliterated and the external wound closed within three weeks.

Injections have been employed in all cases, for fibrin is present in large quantities and decomposes very readily unless removed by irrigation. Solutions of bichloride of mercury, 1–5,000, the final flushing being of the strength of 1–10,000, allowed to flow in gently, answer the purpose and give excellent results. The cavity contracts quite rapidly, and after three to six weeks does not secrete more than a drachm daily. Several weeks more elapse before it is wholly obliterated and the sinus healed. The drainage-tube should not be removed too early, we ought to wait until a mere sinus is left.

A word as regards the rubber drainage-tube. A good tube is recognized by the following characteristics: 1, Transverse markings in the rubber; 2, lightness—should float on water; 3, it should bear being tripled in length without breaking. To prevent it slipping into the pleural cavity I have adopted the plan suggested by Baxter, of Kings' College Hospital. A round hole is cut in a piece of rubber sheeting about one-twelfth inch in thickness and an inch and a half to two inches square. A tube of the size required is then split at one end into two pieces and drawn through the aperture in the flat piece of rubber, turned down, and fixed in position by stitches of silver wire. The tube should be just long enough to project into the chest cavity—one and a half to two inches. Nothing is gained by curling up an enormous length of tubing in the chest. The retraction of the chest on the affected side is temporary and disappears in a month or six weeks, under proper gymnastics and outdoor exercise.

In concluding, though I may not present anything new, I would lay stress upon and call particular attention to a few points frequently overlooked in acute pleurisies in children.

1. In acute pleuritic effusions pus is probably present in a case in which the constitutional disturbances are severe and the fever is high at the outset.

2. If the effusion does not diminish, but continues to increase under treatment, it is probably purulent.

Under the above circumstances an early explorative puncture is indicated.

3. If aspiration reveals a purulent fluid containing numerous flocculi of fibrin, or if (after aspiration) the pus returns quickly to the same extent or is increased in amount, aspiration is of no avail and more radical means must be employed. Finally, if septic symptoms are present, in cise at once.

[1] Chest incised as follows: Case 1 on the twentieth day; Case 2 on the twentieth day; Case 3 on the twenty-first day; Case 4 on the twentieth day; Case 5 on the fourteenth day; Case 6 on the twentieth day; Case 7 on the twentieth day; Case 8 on the twenty-fourth day; Case 9 on the fifteenth day; Case 10 on the sixteenth day.

the pubis, it was determined to relieve it by aspiration. Just as the aspirating-needle was about to be inserted, mention was made of the fact that such cases were claimed by Dr. Otis to be sometimes due to a spasm of the compressor urethræ muscle, caused by a contracted meatus urinarius. The meatus was forthwith divided, and the largest catheter available (30), of the French scale, was introduced, and passed readily into the bladder. As the doctor expressed it, "It slid into the bladder like a boy sliding down an ice-covered hill."

Professor Alfred C. Post relates the following:

In March, 1884, he saw in consultation a lawyer, aged sixty-two, with a retention of urine. There was a history of several previous attacks, which were relieved by the introduction of a small catheter into the membranous portion of the urethra. The urine flowed at this point, but the instrument could not be passed into the bladder. The trouble was believed to be caused by senile enlargement of the the prostate. Examination by the rectum showed that there was no such enlargement. The orifice of the urethra was contracted to 15 of the French scale. Dr. Post incised it and passed 24, the largest catheter he then had, easily into the bladder and relieved the retention. On the following day he incised the orifice still farther, and passed a solid sound, No. 33, with ease. The patient regained at once the power of emptying the bladder voluntarily, and, after a period of several months, was found to have retained this power.

Mr. C——, aged seventy-two, referred to me by Dr. C——, of Ohio. History of difficulty of urination for two years previously. His trouble was assumed to be from prostatic hypertrophy, and the use of the catheter was commenced, using it twice in the twenty-four hours. Twice within the next few months he had a complete retention of urine for a day, with much pain; since that time was able to void but a very small quantity of urine voluntarily. Examination showed but slight prostatic enlargement. Urine increased at will through the catheter. Highly ammoniacal and purulent. Attempts at voluntary urination frequent, with pain in glans penis at close. Examination of the bladder failed to detect stone. Examination of urethra showed a normal calibre of 38, a narrowing at 4 inches of 5 mm., and at 3 inches one of 8 mm., also a narrowing at the orifice to 26; these strictures were divided to 38, and 32 solid sound passed into the bladder.

The immediate result of the operation was slight constitutional disturbance, lasting forty-eight hours, frequent necessity of use of catheter every hour or two for twenty-four hours, then a sudden improvement—intervals, six to eight hours; complete loss of pain at glans penis after voluntary urination and gradual increase of quantity voided. On the seventh day he emptied his bladder voluntarily. He went home on the tenth day with the understanding that the occasional use of the catheter should be continued until the power of emptying the bladder was fully restored. A recent letter from his physician informs me that the use of the catheter is still required to completely empty the bladder, but that there has been no retention; the pain in the glans penis, originally relieved by the operation, had returned. In this case, on account of the age of the patient, 32 sound only was introduced through the deep urethra after operation; a full distension at this point would probably have produced more permanent results, although increasing the risk of constitutional disturbance.

Mr. F——, a gentleman of seventy, suffered with posterior spinal sclerosis for several years, but was able to walk about his apartments, though with difficulty. He lived alone, declining to have any personal attendant. One morning in January last was troubled with slight diarrhœa; he took an accidental overdose of Squibb's tincture of opium. During the narcosis which followed he had a retention of urine of from twelve to eighteen hours' duration; previously to this he had no urinary difficulty. The bladder was gradually emptied by catheter, during the next twenty-four hours from three to four pints being withdrawn. The use of the catheter was continued for twenty-four hours longer, when, having completely recovered from his narcosis, it was found that he was unable to pass a drop of urine voluntarily. He was found not to have any prostate enlargement. This complete retention continued, relieved only by catheter, for the next two weeks, requiring its passage every two hours, day and night, when he regained voluntary power of urination to the extent of passing an ounce or two while in the closet. As a 24 F. catheter had been easily passed, no examination was made for stricture. This was now done, resulting in finding several points of contraction, strictures of large calibre, of 13 mm. (27 F.) in a normal urethra of 40; meatus, 32 F. These were divided and 40 sound passed through the strictures, 38 into bladder. There was not the least constitutional reaction. There was an immediate increase in desire to urinate, requiring now the use of the catheter every hour or two for about a week, caused by a slight cystitis of the vesical neck. This, however, yielded to ordinary measures and he began to urinate voluntarily at irregular intervals, and requiring the passage of the catheter less and less frequently, until at the end of a month he would go five and six hours without the necessity of emptying his bladder. His general health continued excellent, his mental condition improved in a very marked degree, and even his power of locomotion was increased, but his inability to empty his bladder completely continued, having habitually from two to four ounces of residuum after every voluntary micturition. In the meantime ergot, strychnia, iron, cold-water injections into the bladder, douches, etc., had been administered, without apparently affecting the local difficulty in any way, and the case continues in about the same condition to-day.

Another case was one where a slight paresis of twenty years' standing and of central origin complicated the atonic condition. The patient was able to pass the urine voluntarily, with the exception of an ounce or two of residuum. About a month since a uræmic convulsion occurred. Two hours preceding this the urine had been drawn by catheter. Two hours after, when I saw the case, the bladder was prominent above the pubis and I drew off twenty-three ounces of urine of a specific gravity of 1.005. This retention was followed by a complete loss of the voluntary power of urination, which continued for several days.

In May, 1885, Mr. M——, was referred to me by Dr. B. of Canada, with complete loss of the power of voluntary urination. His history was as follows: Three years ago, having had no previous difficulty in urination, he, on one occasion, forgot to void his urine on going to bed. Attempting it on the following morning, he found himself unable to pass a drop. A catheter was introduced by his physician without much difficulty, and a large amount of urine drawn off. This loss of power continued. He was obliged to learn the use of the catheter. From this time, in spite of much treatment by electricity, strychnia, mineral waters, and a thorough course of mercury (as syphilis was suspected by a physician at one of the springs which he visited), he went on without improvement in his urinary function. After a year he had an attack of cystitis, lasting some five weeks, during which his power of urination returned and he was compelled at times to urinate every half-hour. When this cystitis passed off, however, his ability to urinate also departed and he remained in this condition absolutely without being able to pass a drop of urine voluntarily, and was obliged to use a catheter on an average of once every few hours up to the time when he came under my observation, fully two years from the date of his first attack.

The general health of the patient was enfeebled. He was the subject of great mental depression, and was much of the time absorbed in the contemplation of this bladder trouble, but he suffered no pain.

On examination, patient passed a No. 20 gum-elastic

catheter with ease, although at times there was some difficulty from urethral spasm. The urine drawn was clear. There was apparently no atony of the bladder, as the urine was propelled through the catheter with force and was promptly increased at will. There was no prostatic enlargement, and nothing abnormal could be detected through examination of the bladder by metallic sounds or bimanual touch. Penis, 3½ inches in circumference. By urethrometer, 32 mm; at bulb and anterior two inches then there was a narrowing to 25 mm. (7 mm.), for half an inch anterior to which the urethra was contracted at several points from three to five millimetres; narrowing at the meatus to 28 mm.

The presence of more or less stricture had been recognized by his physician, and as all measures used had failed to afford relief, he was referred to me for any operation which might promise to restore his urinary function.

The presence of strictures of large calibre, as in the present instance, had been associated in my experience, in many cases, with repeated retention of urine of a temporary character, in several instances producing more or less atony of the bladder. Here, however, the muscular structures appeared not to have been impaired.

I had seen and reported cases where long-continued partial obstruction to voluntary urination was caused by the reflex influence of strictures of large calibre, as proved by the immediate and permanent relief afforded by their division and the introduction of a full-sized sound, one a notable instance where a retention of three years' standing (the bladder habitually containing two pints of urine) was relieved in a similar manner; but in all the cases there was either inability to pass any instrument through the membranous urethra, or to such a degree as to warrant the assumption that the difficulty, if not organic stricture, was dependent upon spasmodic closure of this portion of the urethra from reflex irritation. In this case, however, while there was, from time to time, much annoyance from such cause during catheterization, yet, as a rule, a 20 F. catheter was readily passed into the bladder, while at no time could a drop of urine be passed voluntarily.

The complete removal of these strictures was advised, with the distinct understanding that while a complete restoration of the urethra to its normal calibre might restore the urinary function, yet it was not improbable that some condition at the vesical neck was the chief cause of the trouble, and if not relieved by the internal urethrotomy a digital exploration of the bladder through perineal section would be required.

On June 1, 1885, Mr. M—— was etherized, his strictures thoroughly divided by dilating urethrotomy, and a No. 32 solid steel sound passed, without force, well into the bladder. The urine was drawn by catheter, as usual, and a No. 32 sound was passed through the urethra as far as the bulb every other day for a week after the operation. A few drops of urine had, from time to time, passed involuntarily during a passage from the bowels after the third or fourth day. On the morning of the eighth day, the urine having been allowed to accumulate until some distention of the bladder was recognized, the attempt to urinate was made; a few drops of urine only responded. This, however, gave a distinct sense of relief, but the remainder required to be drawn with the catheter. Although disappointed at the result, the patient, whose constant brooding over his trouble amounted almost to a monomania, was comforted by a rapid improvement in his general health and in his mental condition, which began immediately after the operation. The ability to void a few drops of water while at stool was the only approach to an improvement in the urinary function which had been attained by the operative measures; and it was evident that the cause was not in the urethra, but in the bladder. It was determined, however, to delay any further operative measures until the autumn, when, if the difficulty still remained, and his general condition seemed to warrant it, the digital exploration of the bladder through the perineum should be made.

Mr. M—— returned early in October, four months after, in excellent condition; but he had had no voluntary passage of urine, except the few drops when his bowels were moved. His sexual powers, which had been greatly impaired before the operation, were fully restored, and he had only the necessity of passing the catheter once in six hours, as against once in four hours previous to the urethrotomy. His urine was examined and found to be normal.

On October 9th Mr. M—— was etherized and the perineal section performed, Dr. L. B. Bangs, Dr. Norris, and Dr. W. K. Otis assisting. Introducing my finger through the perineal opening, I was unable to detect any abnormal condition in the prostate or in the bladder, which was, by means of bimanual touch, thoroughly exposed in every part. The only part that even suggested any further interference was an unusual tightness at the vesical orifice, notwithstanding the thorough dilatation which it had undergone, and this was not, however, considered to require any further operative measures. A tube was introduced and retained for the next five days, when, on removing it, no urine passed through the sound or through the penis. Complete retention occurred, which was relieved by the passage of a catheter through the wound, twelve ounces of urine being withdrawn. With a Davidson's syringe I subsequently introduced water up to fourteen ounces through the tube, without producing any desire to urinate, or any tendency to flow out through the wound or urethra. My urethrometer was introduced through the perineal opening into the bladder, turned up to 45, and withdrawn without resistance. It was then evident that a faulty action of the muscles of the vesical orifice had in some way produced the obstruction. On the previous exploration no organic obstruction like a bar could be detected. It was determined to make a further digital examination under the local influence of cocaine. This was accomplished without difficulty, and with but little pain; nothing new was recognized—the slight constriction at the vesical orifice previously noted was again detected, and it was determined to incise the constriction at that point. This was effected on introducing a straight, blunt bistoury through the perineal wound and dividing the tissue, guided by a finger in the rectum; until, upon a reintroduction of the finger into the bladder, no sense of constriction could be felt at the orifice. The tube was then replaced. There was no constitutional reaction. Forty-eight hours after the operation, for the first time since his original retention, two years previously, Mr. M—— felt a natural desire to urinate, and a few drops of urine were passed through the penis. During the entire period since the commencement of his trouble the call to urinate was only through a sense of distention, which, if not responded to, was soon followed by a pain over the pelvis. On removal of the tube, urine now leaked through the perineal opening.

The day following, October 21st, the patient passed with natural sensation ten ounces of urine through the penis. From this time he passed his urine for a few days about equally through the perineal opening and through the penis, until after a couple of weeks, the perineal wound rapidly healing, the introduction of a catheter was again required, as he could not fully empty his bladder voluntarily, having always from two to four ounces of residual urine. He was advised not to make any straining effort, but in order to completely prevent this he was to use the catheter regularly for at least three or four months. Iron and strychnia internally. By November 30th he went to his home in fair general condition, using his catheter faithfully, but mentally much disturbed that his hopes of being able to void all his urine voluntarily were indefinitely deferred.

I heard nothing from the case until December, 1886, a little over a year after, when I received a letter from

Dr. B. stating that our patient had recovered completely from his urinary troubles and was in excellent health and spirits. He went along worrying and using his catheter for several months after returning home, getting finally into a state of hypochondriasis—complaining of inability to walk and of various discomforts. His physician sent him abroad for a few months, but he returned in the same condition. Being then unable to find any real cause for his alleged suffering, his physician then insisted upon his getting in his carriage and driving about, although the temperature was considerably below zero. He at once improved. Finally he was induced to ride on horseback, and within a very short period the doctor states that our patient had found himself able to fully empty his bladder voluntarily, and from that day to the present has been able to do so, as was reported to me by letter dated April 22, 1886, thus, "Mr. D. is as well as he ever was in his life."

The manner in which the original retention of urine occurred in the foregoing case points clearly, it appears to me, to spasmodic closure of the membranous urethra as the immediate cause, apparently due to the presence of anterior strictures of large calibre. Speaking of this condition, Esmarch says:[1] "My experience enables me to state that spasm of the urethra occurs frequently, and is often, if not principally, the cause of retention of urine."

The direct result of the retention was not to cause a general atony of the bladder, but a disability of the muscular structures in the vicinity of the vesical neck alone.

The chief diagnostic point in the recognition of atony of the bladder, according to Sir Henry Thompson, is the "diminished power of discharging the urine after a catheter has been placed in the bladder." In this case the power to increase the stream under such circumstances was normal, except when the bladder was nearly emptied. A localized instead of a general atony was present, and under conditions that would seem to indicate that this is the form of accident which most commonly occurs when a sudden temporary over-strain is the recognized cause of interference with voluntary micturition.

The contents of the full bladder, when acted upon by the detrusor muscle as a whole, reinforced by the diaphragmatic and abdominal muscles, appears to bring the greater force to bear on the bas-fonde; and if the pressure be so great as to cause over-distention, it would be most likely to occur in the greatest degree at this point.

According to Esmarch, "the outermost longitudinal layer of the detrusor muscle passes vertically into the prostatic ring, and consequently opens the ring as soon as the detrusor contracts over the liquid ball within the bladder. The urine now enters through the prostate into the membranous portion, etc." Here, however, the condition which we call spasmodic contraction of this portion of the urethra arrests the progress of the urine, and the chief strain then falls upon the muscular fibres, which in a normal condition serve to open the vesical orifice. These, too, being attached vertically to that orifice, the force would act directly upon it, and here the atony would be most likely to occur, causing a more or less permanent disability of the emptying power of the bladder. The anterior portion of the detrusor, not having been subjected to such a degree of over-strain, might by its superior tonicity cause a change in the situation of the orifice so as to form an additional barrier to the outflow of urine, which would be increased by voluntary effort to empty the bladder. The operation of incising the vesical neck, as in the case reported, it appears to me, would serve to correct in some degree the disturbed muscular relations of the parts; but chiefly to diminish the resistance of the so-called sphincter vesicæ, and thus make the action of the detrusor more effective, both resulting together in an immediate partial restoration of the function of urination, which as the detrusor gradually gained strength through the rest afforded by the long-continued catheterization, finally brought about a restoration of the voluntary power of emptying the bladder.

The suggestions which, in reviewing the foregoing cases, appear to me most salient are:

1. The necessity of appreciating the fact that slight urethral contractions, at any point from the meatus to the bulb, are a possible cause of retention of urine, through reflex irritation, and should enter into the consideration of such cases, especially in elderly subjects, whenever such contractions are known to exist.

2. The importance of an early recognition and relief of an acute retention by catheterization.

3. That localized atony at the base of the bladder may be present in sufficient degree to wholly prevent voluntary urination, while the contractile power of the superior portion remains practically undiminished.

4. The understanding that the failure to relieve, through the removal of sources of reflex irritation which might be considered sufficient to produce and perpetuate the spasm of the muscular urethra, should suggest the possible relief, even in long-standing cases, which may be afforded by an incision of the vesical neck.

5. That any local or general treatment which may be adopted independently of the removal of the cause upon which it depends is of but little avail for permanent cure.

6. That a period of several months of freedom from the cause producing it must not be considered too long to wait for recovery from over-strain or atony of the bladder.

[1] Ueber harnröhrenkrampf, Arch. f. Klin. Chir., Berlin, 1879, xxiv., 589-665.

A PLEA FOR THE MORE GENERAL USE OF THE NITRATE OF SILVER IN THE DEEP URETHRA, WITH AN IMPROVED INSTRUMENT FOR ITS APPLICATION.[1]

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INFLAMMATORY troubles and irritative disturbances about the deep urethra and the neck of the bladder are to the patient disproportionately offensive, if the subjective annoyance is weighed against the actual gravity of the affection, and to the surgeon often unsatisfactory, because the ordinary methods of treatment are usually slow, uncertain, and at times totally ineffective. I think the above statement is not too broadly drawn.

Our general rules of treatment are, for irritative disorders, alkalies, diluents, diet, the sound, moderate anodynes, the correction of sexual irregularities, and the division of points of narrowness along the anterior urethra. For acute and chronic inflammatory and suppurative disorders we use alkalies, diluents, diet, rest, stronger anodynes, sometimes the balsams internally, and perhaps blisters to the perineum. Local treatment, except the sound, is considered totally ineffective in irritative disorders; it has to be used with great caution in subacute inflammatory conditions, and its employment is commonly interdicted in the acute stages of a given disorder—gonorrhœal or otherwise.

In many of these conditions, and their number is very great, and in others of a sexual sort, such as pollution, spermatorrhœa, lack of sexual vigor, nervous impotence, imperfect erectile capacity, and the like, I have of late years derived such signal advantage from the use of nitrate of silver in the deep urethra, that I feel impelled to lay an outline of the facts before you and to show the instrument upon which I have come entirely to depend. I think I may say that in customary office-practice at the present day my average employment of the nitrate of silver in the deep urethra is greater than the use of any other one single means of treatment of urethral disease, and my success with the method, although, of course, far

[1] Read at the meeting of the American Association of Genito-Urinary Surgeons, May 17, 1887.

from universal, is greater than that which I have derived from any other one means in the management of similar disorders.

I think it necessary to make this statement because I find a wide-spread fear in the profession in America regarding the use of nitrate of silver in the urethra. No less than two members of this Association have declined to use deep urethral nitrate of silver injections upon patients in whom I had already successfully instituted a course of treatment by that means, objecting on the ground of a fear of present or future harm to the patient, if the course were followed out, and in each instance they have advised the patient against it. This same experience at the hands of other surgeons outside of this Association is to me a matter of very common occurrence.

I may state here that I have been almost constantly using the nitrate of silver in the deep urethra for the past four years. I believe it safe to estimate that I have administered no less than three thousand injections upon private patients in my office in that time. I have never seen any harm come of it more than a temporary local irritation lasting a few days, occasionally a show of blood, and one very moderate attack of epididymitis, which possibly was produced by one of my earlier injections. At the hands of my assistants I have seen one case of cystitis and two of swelled testicle caused by it, while they (the doctors) were yet young and inexperienced in the use of the method. These remarks apply only to the last few years, since I have used the instrument of Ultzmann and the one of my own construction, which is a modification of Ultzmann's instrument.

In former days, when I used nitrate of silver injections with old-fashioned instruments I caused considerable havoc and probably more inflammatory disturbance than I cured, so that I gave up the use of deep urethral medication almost absolutely, and it is only upon taking it up again with more knowledge, more care, more sense, I hope, and better instruments, that I have obtained results of what I consider great excellence. I have never gone above the strength of a ten per cent. solution—forty-eight grains to the ounce—except in one instance of nocturnal pollution, and I rarely use a solution stronger than ten grains to the ounce, and usually a much weaker one.

The maladies in which I have had the greatest success are: Gonorrhœal cystitis, acute and chronic; ordinary irritability of the bladder; acute or chronic suppurative inflammation of the deep urethra, with or without surface prostatitis; double relapsing epididymitis, due to the foregoing cause; tendency to relapsing cystitis in connection with large prostate; prostatorrhœa; spermatorrhœa, with abnormal deep urethral sensations, often accompanied by oxaluria, depression, melancholia, etc.; nocturnal pollutions, with apparent lack of sexual vigor; nervous impotence. These cases are sometimes rebellious to this as to all other treatments.

It is proper to state that the treatment does not suit all cases of each of these maladies. On the contrary, cases occasionally turn up which are not at all benefited by this treatment, and even cases which are positively harmed by it. Their number is very small. I never decide to use the treatment in a given case until I have made one, possibly two, tentative injections. If they are well borne and no disturbance follows, even if no good results, I push the treatment, still tentatively. If good is to come of it the fact is apparent after three or four injections, sometimes after the first. The method I employ is always the same. It is based upon a theory which I shall first set forth.

The instrument I use is like Ultzmann's in being open only at its tip. I have seen other instruments so constructed (that is, with one opening only, and that at the tip), but this form, as you know, is not the usual one, most instruments being perforated with a certain number of minute holes or slits for a given distance from the tip, or terminating in a bulb which is variously perforated.

Ultzmann's instrument has, in my opinion, only four defects—the length of the shaft, ample in the vast majority of cases, is sometimes scant in big-bellied old men; the mark upon the hard rubber to show the direction of the tip is not definite enough; the coupling between the syringe proper and the long nozzle is unnecessary, likely to get out of order, and liable to cause the operator to soil his hands; the syringe is flimsy, constantly becoming uncemented at its lower junction. Outside of these minor defects, I consider Ultzmann's syringe perfect.

My own changes have been to meet these requirements. The shaft is seven inches long, with moderately

long curve; the size, 13 French. I have a shorter instrument with different curve for young, small, thin persons. The whole instrument is metal and solidly constructed in a single piece, making leakage impossible and a giving way of any part of the syringe out of the question, unless the piston-packing dries or the glass breaks. I have wide lateral wings, which greatly facilitate the easy use of the instrument, and a pronounced indicator to show the direction of the curve. The metal out of which the long nozzle is made should be pure silver—to prevent decomposition of the solution of nitrate used, which otherwise continues to take place for a long time, until the inside of the tube has become thoroughly coated with the black precipitate, which is at first thrown down if the tube is made of German silver. This coating is liable to flake off in German-silver instruments and clog the tube. The syringe proper may be as well made of German silver. The cost of the pure silver tube is moderate.

The theory upon which I have used the instrument is this. Deep urethral inflammation, when it gets past the hole in the triangular ligament, does not yield to injections of the anterior urethra, because the injected fluid does not penetrate deeply enough. The same power of the cut-off muscles which prevents urine from getting out of the bladder (against one's will) also prevents fluids thrown from the outside from entering the bladder, unless considerable force is used, a violence paid for in some instances by inflammatory reaction. But the passage of an instrument, even very gently, through the deep urethra is not devoid of risk, and the less deeply it is inserted the better for the patient. With an instrument of this kind it is only necessary to simply enter the front part of the membranous urethra. Two or three minims of solution there deposited diffuse themselves backward over the entire membranous and a portion of the prostatic urethra, and do as much good, in my opinion, as if a quart had been used, and far less harm in the way of setting up irritative and inflammatory reaction or the possibility of exciting disturbing complications.

This is the amount of injected fluid used, and the position in which I place it in all the conditions treated, except gonorrhœal (or other suppurative) cystitis of the neck of the bladder. In the latter instance, I inject in the same way from just barely within the beginning of the membranous urethra, but I use more of the injected fluid, generally five minims, occasionally even a little more. This amount diffuses itself backward, and appears to do all the good possible, with no harm. This I consider to be the great advantage of using a syringe open at the tip. By its employment and simply introducing it just within the membranous urethra the whole bladder may be injected, if it is so desired, or as much or as little of the very seat and focus of the irritative part of all the disorders situated in this region, namely, the middle and back parts of the membranous urethra. And this can be

a report of a thoracic aneurism treated after this method by Professor Saboja, of Rio de Janeiro. The patient was a man, twenty-two years of age, suffering from an aneurism of the thoracic aorta. Three watch-springs, aggregating six feet in length, were passed into the sac through a fine cannula. The operation was followed by no bad results, and the patient seemed to be in a fair way to recover, when, fourteen days after the operation, he suddenly died. The autopsy showed that a rupture of the sac had taken place. An end of one of the springs was found presenting at the point of rupture, but it was thought to have been carried there by the escaping blood-stream, and not to have been the cause of the accident. There was no sign of inflammation in the walls of the aneurism. The springs were found embedded in the clots, and broken into fourteen pieces of various lengths. A second tumor was found which communicated with the aorta by the same opening as the larger aneurism.

The result of this trial, notwithstanding the death of the patient, was sufficiently encouraging to convert the operator into an enthusiastic advocate of Bacelli's method, which he calls the most rational treatment for thoracic aneurism of any hitherto proposed.

NEWSPAPERS AND SURGICAL OPERATIONS.

A CORRESPONDENT has kindly favored us with a very interesting collection of daily newspapers containing descriptions of various important surgical operations. These have been culled from New York, Philadelphia, and Western newspapers, and also from weekly local newspapers in various parts of the country. The variety and wide distribution of these articles gives to them a peculiar interest, for it shows that the outbreak of newspaper surgery is not a local disorder. Perhaps the richest and most numerous contributions come from Philadelphia and the great but wicked city of New York. We have, however, some fine illustrations from Chicago and St. Louis, as well as from smaller cities.

One thing is very evident from the clippings furnished us, and that is, that no city can claim that it is better than the rest. It is plainly not a question of codes, but of medical morals as against newspaper enterprise. Many can remember that the late champion of the Old Code, Dr. John P. Gray, published a whole series of his lectures on insanity, delivered before students at one of the colleges here, in the columns of the New York *Tribune*.

FEET.

"How beautiful are thy feet in shoes, O prince's daughter," sang Solomon, nearly three thousand years ago. But time works wondrous changes, and we fear the wise king could not repeat his compliment, were he living in the midst of us now, without doing violence to his conscience. There is no beauty left in the feet of the princess after she has tortured them for years in the narrow leather case raised up at one end, which we miscall shoes.

The foot has struggled bravely to become something more than a mere base of support, and often a painful one, for the human animal. In our supposed progenitors it was so flexible and handy a member as even, though erroneously, to receive the designation of hand, and the apes were called, by Cuvier, quadrumani. Even in some of the human races at the present day the foot is almost as useful for prehension as is the hand. Thus the New Caledonians are said to run up trees with the agility of a cat by grasping the trunk and boughs with the feet and hands alternately, using the two with equal facility. And the instances of individuals, born without arms or having lost these members in early life, who have been able to write, paint, and perform other tasks requiring precision and accuracy of touch by means of their feet alone, are not unknown. But these rare cases of what might be called compulsory atavism only serve to emphasize the failure of the foot in its attempt to raise itself higher than nature intended it should be raised. The moralist might draw from this a warning for those who are ever striving to do what their limited capacities render impossible of accomplishment.

The size of the foot varies in individuals within wide limits, but the average length among different peoples is pretty constant, and would appear, with certain exceptions, to be an indication of the degree of civilization to which the community had attained. Thus, according to a series of measurements collected from various sources by M. Topinard, and quoted by M. Manouvrier in the "Dictionnaire des Sciences Anthropologiques," we find the proportionate length of the foot to the height of the individual, represented by 100, to be as follows: Parisians, 14.8; Russians, 15.5; Hungarians, 15.4; Chinese, 15.1; Australian Aborigines, 15.1; Algerians, 14.8. The Chicago foot is said to bear a much larger proportion to the size of the individual, and a similar disproportion has recently been affirmed of the pedal extremity of the Bostonian by a popular writer, but neither of these reports is substantiated by scientific measurements, and, coming from lay sources, they are not to be relied upon as scientific facts.

The shoes worn by the majority of civilized men are an abomination. They are wrongly constructed and are the cause of most of the acquired deformities of the foot. The axis of the sole of the shoe should not be a straight line, but should be curved, following the natural curve of the foot, with convexity looking outward. The sole should be of moderate thickness and flexible, and the uppers should fit snugly, but not so as to cramp the foot in any part.

ORIGINALITY AND AMERICAN MEDICINE.

THE query must occasionally arise in the American physician's mind whether the profession of this country is not losing some of the originality and inventive power with which we have been in the habit of crediting ourselves. As a faithful chronicler of all important discoveries, devices, and original views or methods, we are obliged to confess that the study of foreign literature brings to us the richest material. That there should be a preponderance of foreign work is natural, since numerically the profession of Europe exceeds that of the United States, to say nothing of the numerous well-established centres in which opportunities for research are freely given. But even admitting this, it seems just now as though American energies were spent mainly in following out lines of thought, modes of research, or methods

of treatment originated in Europe. Our pathologists are pursuing the study of bacteriology along the lines laid down by Koch, at one time a plain country doctor in a small German town. Our surgeons are trying to rival Tait, Keith, Martin, Billroth, and Schede while following strictly the principles first enunciated by a Scotch professor. The brain is being operated upon according to methods devised by Horsley, and the neurologist furnishes indications obtained from a study of the researches made by numerous English and Continental investigators. Our therapeutists are kept busy testing various German antipyretics, antiseptics, antirheumatics, narcotics, and other drugs in almost innumerable amount.

A thorough and logical advocate of the doctrine of protection might claim that there was good reason why the importation of foreign ideas, foreign methods, and foreign alkaloids should receive a prohibitory tariff. If our physicians and surgeons had no oportunity to experiment with things imported, they would have a little leisure for thinking out new ideas of their own. We would not deny that this is done already to some extent, but remembering that the number of American physicians is about one-third of that in Europe, it seems that the proportion of original contributions to our art is below what it should be.

News of the Week.

THE MEDICAL SOCIETY OF NEW JERSEY.—The next annual meeting of the Medical Society of New Jersey will be held in the Baldwin House, Beach Haven, on Tuesday and Wednesday, June 14 and 15, 1887, commencing at 4 o'clock P.M., on Tuesday.

AMERICAN CLIMATOLOGICAL ASSOCIATION.—The fourth annual meeting will be held in Baltimore, Tuesday and Wednesday, May 31 and June 1, 1887, in the hall of the new physical laboratory of Johns Hopkins University, Monument Street, near Eutaw.

THE FLORIDA MEDICAL ASSOCIATION held its thirteenth annual session at St. Augustine, on May 23, 1887.

A CASE OF YELLOW FEVER was observed at Key West, Fla., on May 21st.

A NEW HOSPITAL IN HARLEM was opened in January of this present year, under the auspices of the Commissioners of Charities and Correction. It is to be known as the Harlem Hospital, and it is situated at the foot of East 120th Street. The Hospital contains forty beds, and is supplied with two ambulances. The Visiting Surgeons are Drs. F. S. Dennis and Thomas H. Manley; the Visiting Physician is Dr. J. G. Truax. The House-staff of four are paid a salary of $800, $700, and $600. Dr. Grauer is Pathologist.

HOSPITAL FOR PARALYSIS.—We learn that there has been opened in this city a hospital for the treatment of paralysis, which, it is truly stated, is a very prevalent disease. Whether the institution treats paralysis of the eye, throat, bladder, brain, or legs, we are not informed. But an institution for the treatment of "paralysis" must be as extremely comprehensive in its accommodations as it is inexhaustibly philanthropic in its scope.

THE CROWN PRINCE FREDERICK WILLIAM.—A cablegram from Rome, under date of May 23d, says: "Dr. Mackenzie operated on Crown Prince Frederick William's throat on Saturday. The result was assuring. Professor Virchow made a microscopic examination and does not believe the trouble is serious."

A SURGEON REFUSED HIS FEE.—The newspapers give prominence to a dispute between Dr. Marion Sims and Nat. Goodwin, the husband of the late Eliza Weathersby, the actress. Payment is refused on the old ground that "the treatment did no good." Dr. Sims was called in consultation by the attending physician, Dr. T. S. Robertson, who was in doubt as to the nature of an abdominal tumor from which his patient suffered. The result of the consultation, that an operation afforded the only hope of cure, being communicated to the patient, she earnestly requested its performance. The outcome being fatal, the husband claims that the operation did no good and should not be paid for! Under this extraordinary theory surgeons would soon have to abandon their work. Such actions as those indicated above are particularly unjust. Many surgeons undertake desperate operations against their own inclination and even interest, solely to give the patient an only chance. In such cases the attempt to escape the payment of the fee by claiming that "treatment did no good," furnishes an illustration of colossal meanness, beyond the power of dramatic art to exaggerate or even burlesque.

DR. EDWARD D. GRIFFIN, of Lynn, died on May 8th, aged forty-seven years. Dr. Griffin was a graduate of the New York College of Physicians and Surgeons.

DR. W. HACK, Professor of Laryngology and Dermatology in the University of Freiburg, in Baden, was last week found dead, apparently from heart disease, upon his tricycle, which was standing still in the middle of the road near Staufen, in the Untermunsterthal.

PROFESSOR GOSSELIN. — French surgery sustains a severe loss in the death, on May 1st, of Professor Léon Gosselin, Professor of Surgery in the Paris Faculty, and President of the Academy of Sciences. He was sixty-nine years of age.

PUNISHED FOR REFUSING TO GIVE EXPERT TESTIMONY.—On May 4th the Circuit Court at Lebanon, O., in the case of Dr. Derby against the State, affirmed the decision of the lower court, by which Dr. Derby had been imprisoned and fined for refusing to give expert testimony unless guaranteed the fee of an expert. The circuit court upheld the decision of that of the common pleas upon technical grounds, and without touching the important question as to whether a physician could be compelled to testify as an expert without receiving the fee of an expert. The fact that the doctor voluntarily attended the examination by the coroner made him liable to summons as a witness, in the opinion of the court, without regard to whether his evidence should be in the nature of a knowledge of facts in the premises or of a professional opinion. We are glad to learn that Dr. Derby proposes to carry the case up, and trust that the profession of his State will support him in endeavoring to obtain a final and just decision upon this matter.

ULTIMATE RESULTS OF THE MECHANICAL TREATMENT OF HIP-JOINT DISEASE.—Dr. Henry Ling Taylor writes: "On reading over the report of the discussion on Dr. Shaffer and Dr. Lovett's paper on the 'Ultimate Results of the Mechanical Treatment of Hip-joint Disease,' at the New York Academy of Medicine, May 5, 1887, I notice some important errors in the abstract of my remarks. I did not say and do not believe that adduction is 'due to the fact that patients shrank from putting their entire weight upon the perineal band;' such an idea is nothing short of preposterous in my opinion. I said that the peculiar gait of patients wearing the long splint was partly due to their common disinclination to allow the weight of the body to rest fully on the band for more than an instant. For *adduction* crutch and screw, read *abduction* crutch and screw, since these means are employed to produce abduction. I did not say I would use the abduction crutch in every case, but where a strong and persistent tendency to adduction exists; in the majority of our cases it is not necessary to use it."

THE BOYLSTON PRIZE of the Boylston Medical Society, of Harvard University, has been awarded to Mr. Charles L. Scudeler, for an essay on "Congenital Talipes Equinovarus."

A CHAIR OF LARYNGOLOGY has been created in the Berlin University, and Dr. Bern. Fraenkel has been made Professor.

THE OREGON STATE MEDICAL SOCIETY holds its fourteenth annual meeting at Portland, on June 14, 15 and 16, 1887.

THE OLD BUILDING USED BY THE COLLEGE OF PHYSICIANS AND SURGEONS of this city is to be turned into a business college. Some have hinted that that was what it has been in times past.

BY THE WILL OF THE LATE OLIVER HOYT the sum of $20,000 has been bequeathed to the Methodist Episcopal Hospital of Brooklyn.

DR. WILSON FOX, Physician-in-Ordinary to the Queen, Professor of Clinical Medicine at the University College Hospital, died of pneumonia, on May 3d, in the fifty-sixth year of his age.

"LITERARY PIRACY."—Dr. W. R. Whitehead writes that his article, published first in THE RECORD, and subsequently in the *Provincial Medical Journal* without acknowledgment, was sent to the latter journal by request, and with the understanding that due acknowledgment would be given.

THE AMERICAN ACADEMY OF MEDICINE holds its annual meeting on Friday and Saturday, September 5 and 6, 1887, at Washington, D. C.

REDUCED FARE FOR DELEGATES TO THE AMERICAN MEDICAL ASSOCIATION.—Delegates to the American Medical Association, at Chicago, on June 7th, who go from New York and vicinity, by using the Baltimore & Ohio R. R. can have the privilege of stopping over one train, or almost an entire day, at Washington, and are returned from Chicago via Niagara Falls, thus affording a change of scenery. The rate via this line is $17 going, and $6.67 returning.

THE BILL TO REGULATE THE PRACTICE OF MEDICINE IN NEW YORK STATE passed the Legislature on May 23d.

AN INTERNATIONAL CONGRESS OF INEBRIETY is to be held in London on July 5th and 6th, under the presidency of Dr. Norman Kerr.

THE LATE DR. E. DARWIN HUDSON.—At a meeting of the Faculty of the New York Polyclinic, held Thursday, May 12th, the following action was taken regarding the death of Professor Hudson: "The announcement of the sudden death of Professor Erasmus Darwin Hudson came upon us with such crushing effect that we have not yet had time to recover from the blow which overwhelmed us. Just entering upon the period of mature middle life, where the student passes from experiment and crucible to philosophic thought and ripe judgment, he was well equipped to reap a rich harvest of new scientific knowledge to add to the general stock; but which is now lost to us forever. His honorable positions of visiting physician to Bellevue Hospital; Chairman of Section of General Medicine in the New York Academy of Medicine; Professor of General Medicine and Diseases of the Chest in the New York Polyclinic, afforded him rare opportunities and gave his wide following of admiring disciples the means for becoming acquainted with, and availing themselves of, the rich store of practical knowledge which he had always so ready at hand. Thus deeply impressed, be it therefore

"*Resolved*, That the Faculty of the New York Polyclinic are sensible that they have lost in Professor Hudson an able coadjutor, a popular, learned, and gifted member, and that the graduate pupils in attendance from all parts of the country have lost an eloquent and skilful teacher; and all of us a genial friend."

At a meeting of the Section of Practice, New York Academy of Medicine, held May 17, 1887, on motion of Dr. Thomas H. Burchard the regular order of business was postponed and a committee of three, consisting of Drs. A. Jacobi, T. H. Burchard, and R. C. M. Page was appointed by the chairman to draft a suitable memorial in regard to the death of Dr. E. D. Hudson, late Chairman. The committee reported the following:

"In the full strength of intellectual vigor and the flood of professional success, E. DARWIN HUDSON, JR., A.M., M.D., has closed the volume of his life.

"In an age of rivalries his frank and generous nature, his unsullied integrity and loyalty to truth, made friends of his competitors, and won for him universal esteem.

"In his profession his faithful scholarship and untiring energy secured his elevation to a professorship and his election to the chairmanship of an important section in the New York Academy of Medicine.

"As a man he was true and generous. As a physician he was skilful and wise. As a teacher he was clear, practical, and thorough, his large and enthusiastic classes testifying not only to his personal popularity, but to the value of his teachings. What he said and wrote was not *for* practice, but *from* practice, and his untimely death has robbed his profession of one of the most promising and useful men.

"To the public and profession at large the New York Academy of Medicine desire to give expression to their high appreciation of his worth, and to testify their personal sorrow in his untimely decease. To his family and friends they tender a most sincere and respectful sympathy. R. C. M. PAGE, M.D., *Sec'y.*"

Reports of Societies.

NEW YORK ACADEMY OF MEDICINE.

Stated Meeting, May 19, 1887.

A. JACOBI, M.D., PRESIDENT, IN THE CHAIR.

THE Statistical Secretary, DR. A. B. JUDSON, announced the deaths of

LOUIS SCHULTZE, M.D., AND E. DARWIN HUDSON, M.D.

THE PRESIDENT acknowledged the receipt for the library of *three* manuscript letters by the late

E. G. FOUNTAIN, M.D.,

of Davenport, Ia., on the question of the *oxysulphate of antimony* and *chlorate of potash*. It was Dr. Fountain who lost his life from nephritis produced by chlorate of potash through therapeutic experimentation on himself. The letters were written in the autumn of 1859.

The President also presented the letters written by the late Dr. Hudson with reference to the question to be discussed in the Academy this evening.

The Academy adopted the recommendation of the Council, and voted to place the name of

MRS. CELINE B. HOSACK

on the list of *benefactors*.

THE MANAGEMENT OF EMPYEMA, MEDICAL AND SURGICAL.

The above subject was presented by the *Section in Practice*. The discusssion was opened by DR. L. EMMETT HOLT, who read a paper (see p 602) on

THE RELATIVE ADVANTAGES OF ASPIRATION AND EARLY INCISION IN THE TREATMENT OF EMPYEMA IN CHILDREN.

DR. FRANCIS HUBER followed with a paper (see p. 604) on

ACUTE EMPYEMA IN CHILDREN.

DR. ROBERT ABBE then read a paper (see p. 606) entitled

GENERAL CONSIDERATION OF THE SURGICAL TREATMENT OF EMPYEMA.

The discussion was continued by DR. T. H. BURCHARD, who said that his experience was limited to *eleven* cases of chronic empyema, the youngest patient being three years old, and the oldest a man fifty years of age. In all the cases the patients had been subjected to aspiration before the cutting operation, which consisted in making a free incision from one inch and three-quarters to two inches long, usually along the superior border of the eighth rib. The smallest quantity of pus evacuated was *seven ounces*, in a boy seventeen years of age, and the most chronic case which he had seen. The largest quantity of pus evacuated was twelve quarts, drawn from the left chest of a man twenty-eight years of age, three days after an aspiration had removed one and a half pints. The previous health of the patients was good in five cases, delicate in four, and in two there were evidences of phthisis. Three patients recovered entirely, two developed phthisis subsequently, from which they died; one has phthisis now, and one died of dysentery (evidently tubercular), fourteen months after the operation.

HEMORRHAGIC PLEURISY

followed the operation in two cases and proved fatal. Dr. Burchard regarded the hemorrhage as due to capillary oozing, the same as occurs occasionally in old men whose bladders are emptied suddenly while suffering from retention of urine. He advised early performance of the operation to prevent fatal results from diseases liable to develop.

DR. H. N. HEINEMAN contrasted the two conditions —empyema in children and in adults—and pointed out that they differ notably in their clinical history. The disease is common in children, very frequently has associated slight involvement of the opposite lung, and when on the left side is apt to be complicated by pericarditis. Distinct flatness on percussion is not so common in children as in adults, and when he heard distinct cavernous breathing or gurgles close under the ear at a fixed level, he always suspected that he had to deal with pleurisy rather than pulmonary consolidation.

So far as treatment was concerned, he used the aspirator once, perhaps twice, and then if there was not a prompt subsidence of the disease, he made an incision into the cavity. During the last ten years he had used, with very satisfactory results,

THROUGH DRAINAGE.

DR. E. G. JANEWAY said that if the first aspiration failed to afford permanent relief, he advised that free incision be made immediately. There were some cases, however, in which

INCISION COULD NOT BE PRACTISED.

Empyema as a complication of pyæmia could not be cured by incision. Double empyema with pericarditis did not permit incision; and there were cases in which the fluid was septic, where the surgeon was debarred from the operation. He also referred to a case seen in consultation with Drs. E. S. Warner and J. Woodman, one of gangrene of the lung with pyo-pneumothorax, and the foul fluid was so shut in with consolidated lung above that an exploratory puncture made where an incision would have been of service, only made the patient spit up a small quantity of blood. That man is now so well that Dr. Janeway had found it difficult to say which side was affected.

There are cases in which the aspirator will not evacuate the cavity, even though the fluid be such as will flow through the needle freely. Free incision in these cases at the spot where

THE ASPIRATOR FAILED TO OBTAIN FLUID

has allowed a large quantity of sero-purulent fluid to escape without flocculi of fibrin. He was decidedly in favor of *early operation* in preference to aspiration; an incision where, as a rule, a single aspiration has failed.

DR. W. H. KATZENBACH'S experience had been derived, chiefly, in the treatment of empyema in adults. The rules by which he had been guided were to make an exploratory puncture with a hypodermic needle, and if pus was found, to aspirate. If the pus was fetid, he incised, irrigated, and drained the cavity. If the pus was laudable, but reaccumulated rapidly, he would make the incision and drain. Where the pus points externally he endeavors to make an opening at that point, and also a counter-opening perhaps, and either through drainage or irrigate and drain, and treat the case antiseptically. Dr. Katzenbach then referred to a case already partially reported, in which the duration of the empyema was from October, 1878, to February, 1886, in which aspiration was performed frequently, and very large quantities of pus withdrawn.

DR. ALFRED L. LOOMIS had been accustomed to regard pleurisy in children as very different from the pleurisy of adults. Acute suppurative pleurisy in children, according to his observation, was very common, and the management of these cases had been very satisfactory, according to the general rules which had been so clearly set forth by those who had preceded him in the discussion. But

ACUTE SUPPURATIVE PLEURISY IN THE ADULT

was a very different affection, and, according to his observation, it was dangerous in the great majority of cases. He had come to recognize it as an *infectious pleurisy* in almost all cases, and, as a rule, as in children, there is some—perhaps slight—involvement of the

opposite lung. The rapidity with which the cavity fills in these cases is remarkable. He had seen cases in the adult in which the pleural cavity filled completely with pus within twenty-four hours, and it had seemed to him that the withdrawal of the fluid had influenced the course of the disease but very little. If the acute stage could be gotten over, then the case is one of simple empyema, and the complete recoveries that have taken place after that stage has been reached speak decidedly in favor of free incision. But

THE FREE INCISION DOES NOT PREVENT A FATAL ISSUE

during the acute process of the disease. He believed that these cases were fibrinous at the beginning, for the first twenty-four hours, and then the chest fills rapidly with fluid.

With regard to *chronic empyema in the adult*, there was always something behind the pleurisy that must be looked for as the cause of the pus in the pleural cavity. Simply evacuating the pus in these cases, without change of air and medical treatment, was not so likely to be successful as in chronic empyema in children.

DR. J. WEST ROOSEVELT thought that the chances for success with aspiration in children should be better than in the adult, because only the superficial epithelia of the pleura are destroyed in children, whereas the lesion is very much deeper in adults. He then referred to a case of pyo-pneumothorax, in which aspiration was practised, and finally the cutting operation was undertaken as a palliative measure, as there was phthisis of the opposite lung. The patient took ether badly, and he was turned upon his left side, when the heart and respiration ceased, and the pus poured out of the mouth, and the patient was dead.

He was unable to understand why it was that anyone should wish to wash out the pleural cavity, as it was impossible to bring the antiseptic fluid into contact with all parts of it. So far as *perflation* was concerned, he regarded it as

AN EXCELLENT METHOD OF PRODUCING RUPTURE OF THE LUNG.

DR. A. CAILLE had operated 22 times—19 in children and 3 in adults. The children were from five to six months old. There were *six* deaths, *fifteen* recoveries, and one case was under treatment. He uses the aspirator needle for diagnosis. When empyema is present, it should be treated just like any other abscess, an incision made, and free drainage established. He was thoroughly in accord with Dr. Abbe's views. He would not use carbolic acid in the thoracic cavity, especially in children, because of the liability to produce its constitutional toxic effects.

DR. J. E. WINTERS took strong exception to the statements that pleurisy in children "almost always ends in the formation of pus." Of 90 cases seen by him in the Demilt Dispensary, empyema occurred in only *four*. Of the 86 cases not one terminated in purulent effusion; every case had been followed to its termination, and the termination had been in complete recovery.

He also took exception to the statement that pleurisy with high temperature at the beginning is almost always suppurative. He did not think it was true. There were two cases in his number that required an operation, but the fluid was not pus. He had not seen a case without abundance of serum with the pus, and it was because of that fact that

THE EMPYEMA OF CHILDREN IS CAPABLE OF ABSORPTION.

He had not interfered, except to remove the mechanical effect produced by pressure. He seriously objected to the use of either the hypodermic needle or that of the aspirator, until it was decidedly necessary, because he believed that they tended to the formation of pus. From what he had seen of pleurisy in children with large effusion, termination in empyema was exceedingly rare, and in almost all cases pleurisy could be treated successfully, without the use of the aspirator and without incision. But when it was necessary to operate, he preferred the free incision.

THE PRESIDENT said that Dr. Huber spoke of empyema and not of pleurisy, and did not say that every case of pleurisy commenced with chill and high fever, and then turned into empyema. Therefore his statements were not untrue.

DR. A. SEIBERT said, with regard to the use of the hypodermic needle, that whenever it was used antiseptically it was absolutely impossible to do any harm. It should be the rule of every practitioner to have a needle which was perfectly clean and a syringe that was not used for any other purpose.

One of the speakers had said that the washing out was not beneficial. He believed that the benefit was due less to the antiseptic fluid than to the force with which the fluid came out and carried with it the flocculent material. He had seen a large number of cases of empyema in children, and he believed that a large proportion of cases are developed by

THE USE OF DIRTY NEEDLES.

He would never treat a simple case of serous pleurisy by aspiration. He believed in tapping every large effusion and removing as much as possible, antiseptically and slowly, and the results will always be good.

DR. HEINEMAN referred to a case under Dr. Scharlau's care at the Mount Sinai Hospital, where it had been arranged to adopt the "subaqueous" method of drainage. The moment the fluid was let out there came also a quantity of blood so great that the child went into collapse. The doctor at once reintroduced fluid into the cavity, and the child rallied, and from that the case went on as an ordinary case of empyema.

THE PRESIDENT spoke of the *severe cough* set up during the operation, which might continue for hours, perhaps for days. Why did it occur, and how was it to be remedied? A case was related in which aspiration had been practised several times with temporary relief, but it came finally to the operation, and when *thirty* odd ounces of pus had escaped the man began to cough, and it could be stopped only by

RETURNING TEN OR TWELVE OUNCES OF FLUID TO THE PLEURAL CAVITY.

He believed that this procedure would be found to be a good method of stopping this distressing cough. This patient coughed every time the cavity was emptied, and the cough ceased when fluid was returned to the cavity. The final operation in the case must be resection of several inches of ribs. He thought it was evident that in this case the cough was due to sudden filling of the blood-vessels, which also carried with it the tendency to bronchopneumonia or œdema, and also a tendency to hemorrhage from the same cause. Cough had been attributed to irritation of the pleura during the operation, but he had been unable to convince himself that it was true.

DR. ABBE thought it was quite as probable that the cough was reflex in character, as aphonia, disturbances of vision, etc., had been produced apparently by disturbance of the nerves in connection with the pleural surface.

THE PRESIDENT: If reflex, why cease when liquid is introduced into the cavity?

DR. ABBE: The fluid covers the sensitive portion of the pleura.

THE PRESIDENT could explain the loss of voice by the sudden development of hyperæmia of the larynx, and the disturbance of vision by the probable anæmia of the brain in consequence of the sudden change in the chest.

The President announced that at the next meeting of the Academy the subject of *Intubation of the Larynx* would be presented in short papers.

Dr. R. C. M. Page, Secretary of the Section in Practice, reported resolutions on the death of Dr. E. Darwin Hudson, prepared by the committee appointed at the last meeting of the Section, Drs. A. Jacobi, T. H. Burchard, and R. C. M. Page, which were unanimously adopted.

The Academy then adjourned.

AMERICAN ASSOCIATION OF GENITO-URINARY SURGEONS.

First Annual Meeting, held at the Laurel House, Lakewood, N. J., May 17 and 18, 1887.

TUESDAY, MAY 17TH—FIRST DAY—MORNING SESSION.

The meeting was called to order by the President, Dr. E. L. Keyes, of New York, at 11.30 A.M.

THE PRESIDENT'S ADDRESS.

Dr. Keyes, in his address of welcome, first alluded to the circumstances which had led to the formation of the Association. Then, speaking of the objects of the Association, he said he need not enter into the question of specialism as distinguished from general medicine and surgery. That distinction was being made for us by the circumstances of the times. The concentration of labor certainly yielded more perfect results than its general distribution. There was a field ready, and those who wished might enter in and work. Because a man belonged to this Association did not imply that he at all confined his ability to its peculiar line of study; but it furnished to him an arena in which he might develop his ideas and display the work he had done under the keen criticism of minds familiar with the subject-matter treated, and capable of still further refining, by their discussion, the quality of his work and enhancing its value.

Dr. F. B. Greenough, of Boston, read a paper entitled

A FEW STATISTICS ON THE COMPARATIVE FREQUENCY OF THE CHANCROID.

He referred to the marked individuality that was given to the chancroid by the text-books, in spite of which the great difference in the statistics by different observers would show that they must have used a different system of classification. Throughout this divergence of statistics, however, two facts appeared. First, that this lesion had diminished in its relative frequency to the true chancre, with the exception of two periods in Paris, that is, during the war and siege (1870–71) and during the Exposition (1876), and that it occurred more frequently in hospital than in private practice. Dr. Greenough's records at the Boston Dispensary from July 1, 1873, to March 31, 1887, gave a total of 1,593 cases, of which 391 were chancroids, 219 true chancres, 931 doubtful, and 52 cases of herpes progenitalis, making the chancroid stand in proportion to other lesions in the ratio of 1 to 3. These records were not satisfactory, as they showed only the diagnosis made at the time of the first visit. In private practice, out of 100 cases seen 10 were chancroids, 63 were true chancres, 13 were doubtful, and 14 were herpes progenitalis, being a ratio of 1 to 10. The diagnosis in these cases was much more reliable. Both sets of cases showed diminution in the frequency of chancroid. The author thought this was due in part to a change in the type of the disease, and a change in the severity of the cutaneous manifestations in syphilis. Herpes progenitalis not having been recognized by earlier writers was undoubtedly often mistaken for chancroid, and probably also a not uncommon inflammation of a sebaceous follicle on the shaft of the penis, and the treatment of either of these lesions by cauterization, universally practised at that time, would make a very good imitation of a chancroid. The fact that the chancroid had just been recognized and described as a local venereal sore, distinct from the chancre, would make it largely sought for at that time.

Dr. Greenough thought that at the present day a virulent bubo was not more frequently seen in connection with a chancroid than with a true chancre, which he considered was due partly to the fact that this lesion was not so frequently initiated by caustics, and he also ascribed the greater variety of the chancroid to the fact that they were no longer manufactured by cauterizing every venereal sore that was not a typical true chancre.

Dr. F. R. Sturgis said that, according to his observation in Charity Hospital, New York, and dispensary practice, the number of cases of chancroid compared with those of chancre were diminishing.

Dr. R. W. Taylor, Dr. Hyde, Dr. Morrow, and Dr. Rockwell had observed a diminution in the relative frequency of chancroid to chancre.

Dr. Hyde thought the need of time in which to form an opinion whether a given lesion would or would not be followed by the manifestations of syphilis should be more generally recognized.

Dr. Otis did not agree in so general a condemnation of the cautery. When used early it was of benefit, used late it might do harm.

The President agreed in the remarks made regarding statistics, but he expressed his belief in the virulence of chancroidal pus as compared with ordinary pus. He agreed with Dr. Otis that cauterization of virulent sores within the first ten days was good practice.

The President read a paper entitled

SUPRA-PUBIC CYSTOTOMY FOR VESICAL TUMORS AND LARGE CALCULUS; A RECORD OF THREE CONSECUTIVE SUCCESSFUL CASES, WITH COMMENTS UPON VESICAL SUTURE, AND A SUGGESTION FOR DRAINAGE.

He advocated supra-pubic cystotomy for vesical tumors, for certain foreign bodies, in cases of very large stone, and in certain exceptional instances for exploration. The method should not be adopted as the usual one in stone. He gave statistics showing that it was especially objectionable in children. He had operated for the relief of large fibro-papilloma, for flat villous growth, and for a large calculus. He described his way of dealing with hemorrhage and of applying the vesical suture. A double curved retractor was exhibited, and a description given of his method of effecting perineal drainage by puncture, probe, and catheter, making only a small perineal incision. The drainage is considered by Dr. Keyes a most essential step in the operation, and the one feature which makes vesical suture safe and likely to be generally effective; while drainage in the perineum avoids one of the discomforts of supra-pubic section, namely, obstinate fistule.

He prepares a No. 30 French red rubber catheter by passing a string through it, the string being knotted inside the tip. This he passes by means of a long probe inserted through a puncture made upon a broadly grooved staff, and by aid of a finger in the rectum, thus entering the draining-catheter through a hole only just as large as itself.

The paper was discussed by Drs. Cabot, Rockwell, Bryson, and Otis.

Dr. A. T. Cabot, of Boston, read a paper on

A CASE OF HYSTERECTOMY FOR THE RELIEF OF PYELITIS FROM OBSTRUCTION.

and referred first to a case in which an operation was not performed. The patient died, and the autopsy revealed the fact that the symptoms of obstruction of the ureters which came on late in the history of the fibroid was probably due to settling of the fibroid in the pelvis and contraction of former adhesions while it was in that position.

In the case which was made the basis of the paper the pyelitis occurred as an early symptom while removal of the pelvic tumor was possible. A second tumor, the size of an orange, was felt near the umbilicus, thought to be probably attached by pedicle to the one, the size of a child's head, projecting deeply into Douglas' pouch.

Later the condition of the urine and the character of micturition, pain, etc., pointed to cystitis from pressure. Two weeks later the symptoms were those of probable suppuration in one or both tumors. The smaller abdominal tumor was removed, after which micturition was less frequent. But the appearance of pus in the urine and other symptoms pointed to pyelitis, the condition of the kidney being considered due to pressure of the pelvic tumor. At an operation for its removal it was with difficulty that it could be pushed up into the abdominal cavity, so tightly was it wedged in the pelvis. The adhesions were not important. The uterus was removed with the tumor, only a part of the cervix being left. The patient rapidly regained strength, and wished to return to work. The urine had become almost clear.

In the absence of the author the Secretary read a paper by DR. GEORGE CHISMORE, of San Francisco, entitled

SOME CASES OF PYELITIS, IN WHICH FREQUENT AND PAINFUL MICTURITION WAS THE CHIEF SYMPTOM.

Two cases in particular were cited to call attention to the fact noted in the books, but not sufficiently emphasized, namely, that frequent and painful micturition might be so pronounced a symptom in pyelitis as to mislead the experienced observer as to the nature of the case, and cause him to address treatment to the bladder alone while the real malady was in the kidneys. In one of his cases, in which frequent and painful micturition was the chief symptom, the man had sustained a violent muscular strain in the region of the kidney, and for some years afterward suffered in the extreme, and was treated for cystitis by some of the most distinguished specialists; but finally the abscess of the kidney discharged and the patient recovered.

In the second case treatment was directed to presumable cystitis, and at the autopsy the kidney was found riddled with abscesses. He asked, how many times has the healthy bladder been subjected to every variety of persistent treatment while disease of the kidneys has gone on, only shown to be present by post-mortem examination?

He believed that in many cases the diagnosis of pyelitis could be made only by exclusion.

EVENING SESSION.

ON HORNY GROWTH OF THE PENIS, WITH EXHIBITION OF A REMARKABLE CASE.

DR. J. H. BRINTON, of Philadelphia, read the paper, exhibiting a specimen, and referring to those on record. His specimen was from a man on whose penis a horn had existed more than four years, having started from a wart. The wart had itched occasionally, and the patient had scratched it for this reason. Gradually it turned into horny substance. It caused no trouble, except mechanical interference with coition. The horn sprang from the base of the glans, at the coronary border, and was attached to both the glans and prepuce; it was one and seven-eighths inch long, one and three-eighths inch in circumference; it was curved forward. A peculiar feature in this particular case was the fact that the horny plate surrounding the meatus almost occluded the meatus, so that the urine passed only in drops. The urethra behind the horny plate was not contracted. The horn was cut off, and the man left the hospital after about three weeks.

The rarity of horny growths upon the penis was somewhat remarkable. He was surprised to find only fourteen cases recorded in English, German, and French literature. A few more cases had been vaguely alluded to. They occurred either as well-marked projecting horns, or as rough, flat, horny plates occupying the glans penis; they were sometimes multiple. The longest on record was three inches.

DR. CABOT had seen a horn, perhaps the size of the thumb-nail, occupying the dorsum of the glans penis, in a patient of Dr. Bigelow's, about twelve years ago. He could not say whether it had been reported.

DR. J. P. BRYSON, of St. Louis, then read a paper on

THE CHOICE OF OPERATION FOR THE REMOVAL OF VESICAL CALCULUS IN CASES COMPLICATED BY PROSTATIC OBSTRUCTION.

It seemed strange to the author how little influence prostatic enlargement has upon the cutting or crushing operation for stone in the bladder. He believed that very rarely was section made purely for prostatic reasons, that is, with the intention not only of removing the stone, but for reducing the size of the prostate as well, and thus reducing in intensity, at least, the causes which were most active in the production of stone, as well as lessening the sufferings of the patient in after years. Since 1884 he had operated for stone by prerectal section in four cases, all complicated by a large hypertrophic prostate gland, and had had opportunity to observe one other similar case in the practice of a friend. The age of the patients varied from sixty-five to seventy-four years. The operation in each case was successful. In one of his cases he had occasion again to make an incision and enter the tip of his finger, having failed at the first operation to entirely evacuate all the fragments; in two others opportunity to remeasure the size of the prostate was offered during an operation for return of the stone. In one case he estimated the reduction in size of the prostate after the first operation to have been about one-third in its length, and in the other about one-fourth; in none was there now any residual urine of importance. He did not believe that any other operation for removal of the stone would have been attended by so marked reduction in the size of the enlarged prostate.

THE PRESIDENT remarked that while the success of the cutting operation in the cases reported by Dr. Bryson as occurring in old people, had been all that one could ask, yet this operation was shown by statistics to have a much larger mortality in the aged than lithotripaxy. Whatever the effect of the cutting operation upon the size of the prostate, he thought we should do the crushing operation first, if it were practicable, as it was much less dangerous, and if it failed to relieve the symptoms to consider afterward the propriety of any other procedure. He regarded Dr. Bryson's paper as very suggestive.

DR. BRYSON said that in none of his cases was the cutting operation the operation of choice. The effect upon the prostate having been noticed, he thought it was worthy of consideration. The discussion was participated in by Drs. Otis and Cabot.

DR. P. A. MORROW read a paper on

IDIOSYNCRASY AS AFFECTING THE SPECIFIC TREATMENT OF SYPHILIS.

The author first refers to the ample justification of the claims of mercury and iodide of potassium to be ranked as "specifics" in the treatment of syphilis. These agents, when introduced into the organism, directly attack and cause to disappear the organic lesions as well as the functional disorders created by the syphilitic virus. Experience shows, however, that the action of these drugs is by no means constant and infallible—all syphilitics are not equally susceptible to this curative action. The definite peculiarities of constitution which are generally included in the term idiosyncrasy exert a dominant influence in modifying drug action. The therapeutic action of specific remedies is especially subordinated to conditions of aptitude inherent in the individual.

Idiosyncrasy in relation to the action of mercury and iodide of potassium may be manifest in various modes and degrees of intensity: 1. In an abnormal susceptibility to their physiological or toxic effects. 2. In the produc-

tion of incidental ill effects which may be associated with the drug's physiological action, or may take the place of it, constituting an aberration of the drug's typical mode of action. 3. In an insensibility or failure on the part of the system to respond to the curative action of these drugs.

Various clinical examples were given illustrating the foregoing propositions, particularly cases of idiosyncrasy against the iodide so marked that the local and constitutional disorders caused by the drug surpassed in severity the symptoms of the disease itself. In one case under recent observation ordinary medicinal doses of the iodide repeatedly caused a multiform eruption, consisting of pustular, bullous, nodular, and keloidal lesions, attended with the most pronounced symptoms of constitutional "iodism." The specific lesions were much aggravated under its use.

The various expedients which have been recommended to secure tolerance of these drugs by counteracting their ill effects were enumerated in detail, and their comparative value considered.

In conclusion the author suggested that the practical significance of idiosyncrasy and its bearing upon treatment had not received from specialists the consideration its importance demands. The rules of treatment had been rigorously and mathematically formulated—so many months of mercury, and after a certain date recourse to the iodide of potassium, without reference to the immense variance in the constitution and idiosyncrasies of patients, not only in the toleration of those drugs, but in susceptibility to their curative action.

Dr. R. W. Taylor, of New York, related some

OBSERVATIONS ON THE USE OF OIL OF WINTERGREEN IN THE TREATMENT OF GONORRHŒAL RHEUMATISM,

in which he detailed the histories of about twenty cases of gonorrhœal rheumatism occurring in Charity Hospital the past year, in which he had given the oil of wintergreen a thorough trial. In about nine of the cases the disease was of that chronic kind, in old or neglected subjects, in whom no treatmeut could prove of much benefit. In the others the benefit was marked, and most of them after some weeks recovered entirely. The drug was administered in capsules in pretty large doses, varying according to the circumstances. The urethral secretion also became bland under the action of the drug, and disappeared. Other remedies had in most cases been tried with little or no effect.

Dr. Algernon S. Garnett was the author of a paper, which, in his absence, was read by the Secretary, entitled

A FEW PRACTICAL OBSERVATIONS ON THE TREATMENT OF LATE NEOPLASMS OF SYPHILIS.

The author thought it was an error to give fixed doses, especially in the latter stages of syphilis, without due regard to the nature of the case. He believed in removing neoplasms, slight or grave, and considered no patient safe as long as there was the slightest evidence of the disease. The iodide of potassium or mercury should be pushed in every stage of syphilis as far as it could be borne. If cachexia in the latter stage prevented the free use of mercury, tolerance of the drug must be cultivated until the patient could be put under its full influence. Syphilis, he thought, was not a benign disease at all.

The President exhibited a Reverdin instrument which he had modified for the purpose of performing subcutaneous ligation in varicocele in the manner he had described about two years ago.

Wednesday, May 18th—Second Day—Morning Session.

Dr. Keyes was re-elected President, and Dr. R. W. Taylor Secretary and Treasurer.

A paper on

TEMPORARY OVERSTRAIN OF THE BLADDER, PRODUCING CHRONIC RETENTION OF URINE.

was then read by Dr. F. N. Otis (see p. 595).

Dr. J. N. Hyde, of Chicago, read a paper entitled

EARLY SYPHILITIC EPIDIDYMITIS.

The author cited cases which had come under his observation with a view of presenting the negative side of the subject. The following propositions, he thought, rested on fairly sound clinical grounds: 1. A male patient may suffer from blennorrhagic epididymitis on one side, subsequently contract syphilis, yet escape syphilitic involvement of the epididymis. 2. A male patient may suffer from blennorrhagic epididymitis, involving first one organ, then the other, finally acquire syphilis, and escape syphilitic epididymitis. 3. A male patient may suffer from blennorrhagic epididymitis of one or both organs, become so irritable as to exhibit by inflammatory accidents sympathy with successive blennorrhagic attacks, yet throughout a final syphilis betray no sensitiveness to the last-named disease. 4. A male patient affected at the same time with syphilis and blennorrhœa may suffer from an epididymitis, evidently a complication of the last-mentioned disease—namely, blennorrhœa—and yet escape syphilitic involvement of the organ. 5. A male patient may suffer from tuberculosis, subsequently incur syphilis, yet the epididymis escape involvement. 6. A male patient who has suffered from repeated attacks of blennorrhœa, and that lately, may exhibit the typical form of early syphilitic epididymitis.

Dr. A. T. Cabot, of Boston, reported two cases of

PROSTATOTOMY FOR OBSTRUCTION.

In one the operation was followed by almost complete recovery of the function of the bladder. In this case litholapaxy was done on the stone before the operation of prostatotomy. In the other case, although the first result of the operation was satisfactory, a certain amount of incontinence appeared some months later. Dr. Cabot ascribed this to the hypertrophied condition of the bladder, which was sufficient to overcome the constrictor muscle weakened as a result of the incision into the membranous urethra. He queried whether in a case like this, with good evidence of a hypertrophied bladder, and in which the obstruction was a narrow bar, the internal prostatotomy of Mercier might not prove the better operation.

Dr. Keyes read a paper, entitled

A PLEA FOR THE MORE GENERAL USE OF THE NITRATE OF SILVER IN THE DEEP URETHRA, WITH AN IMPROVED INSTRUMENT FOR ITS APPLICATION.

In the full discussion on the paper which followed, most of the members expressed hopes of better results from deep urethral injections of nitrate of silver than had hitherto been generally attained. Dr. J. H. Brinton was one of the strongest advocates of this method, which he had practised extensively. To relieve the discomfort or pain which the patient experienced after treatment by this or other methods, he had the patient stand by the basin and allow a small stream of water to run over the corona of the penis; the relief was almost immediate. Dr. Mastin referred to the practice of Professor Richardson, consisting in injecting a drachm of almost a saturated solution of nitrate of silver into the bladder in gonorrhœa and chronic cystitis.

Dr. R. W. Taylor, of New York, then exhibited

SECTIONS OF TUBERCULAR TESTES WITH BACILLI, AND THE COEXISTENT BACILLI IN THE SPUTUM.

The Association then adjourned to meet next year, time and place to be announced.

A Case of Infantile Eczema of six months' duration was cured by Dr. Meigs in one week with the following: ℞. Unguent. zinci oxidi, ung. petrolati, āā, ℥ ss.; hydrarg. chlorid. mitis, gr. x. M. Sig.: Apply freely.—*Col. and Clin. Record.*

AMERICAN SURGICAL ASSOCIATION.

Annual Meeting, held in Washington, D. C., May 11, 12, 13, and 14, 1887.

(Continued from page 591.)

THURSDAY, MAY 12TH—SECOND DAY—AFTERNOON SESSION.

DR. R. A. KINLOCH, of Charleston, S. C., presented a case of

PISTOL-SHOT WOUND OF THE ABDOMEN TREATED BY LAPAROTOMY AND SUTURING THE INTESTINES.

J. B——, colored, aged twenty-seven, was admitted into the City Hospital, January 21st, at 7.50 P.M. He had been shot two hours before in the abdomen with a pistol ball (38 calibre). The ball entered one and one-half inch to the left of the umbilicus. There was slight shock. The patient seemed to be comfortable, with the exception of a slight pain on the inside of the left thigh, which was intensified by movement. Pulse, 88; respiration, 24; temperature, 99°. At 10 P.M. half a grain of morphia was given hypodermatically, and shortly afterward anæsthesia was induced by the A. C. E. mixture. Penetration of the peritoneum was first determined, and the abdomen was then opened by median incision. A weak carbolic spray was used. The intestines were examined piece by piece, and wrapped in towels wrung out of a one to ten thousand bichloride of mercury solution. The jejunum presented four wounds, two of entrance and two of exit. The ileum had two wounds. The mesentery was perforated in two places and was also badly torn. There was free bleeding from a mesenteric branch, which was controlled by pressure-forceps and subsequently by ligature of silk. All the wounds were closed with the Lembert suture, using a fine round needle and antiseptic silk. The wounds of the mesentery were brought together, as far as was possible, but there was an infiltration of blood which could not be removed. The abdominal cavity was washed out with a weak solution of hydrarg. bichloride. The abdominal wound was closed with silver sutures, and a large rubber drainage-tube introduced. Antiseptic precautions were observed throughout the operation. The next morning vomiting occurred, and an examination of the wound showed that a suture had given way, and a knuckle of intestine protruded. This was returned and the opening closed. At 5 P.M. the temperature was 102°. Vomiting again occurred, and shortly after midnight the patient expired suddenly.

Autopsy—No adhesion of the parietal peritoneum had occurred. Half a pint of dark, sero-sanguinolent fluid was found in the cavity. All the intestinal sutures had held, and there was no fecal extravasation. A circumscribed abscess was discovered in the meso-colon, out of the line of the bullet. The ball was found behind the body of the fourth lumbar on the left side.

This was the third case in which the author had performed laparotomy for bullet-wounds of the abdomen without visceral protrusion. In two cases of such injury the patients recovered without operation. The first operation was performed May 27, 1863; this patient recovered. The operation was performed seven months after the injury. There had been but one discharge from the bowels, and the patient was gradually sinking. This was the first time that laparotomy was done for gunshot wound without protrusion.

DR. W. W. KEEN, of Philadelphia, gave an account of a case of

PISTOL-SHOT WOUND OF THE ABDOMEN, INVOLVING THE LIVER, STOMACH, SUPERIOR MESENTERIC VEIN, INTESTINE, AND KIDNEY—LAPAROTOMY—NEPHRECTOMY—DEATH ON THE FIFTEENTH DAY—AUTOPSY.

Miss B——, of Vineland, N. J., a girl aged nearly eighteen, shot herself with a pistol, calibre No. 32, at 6.30 A.M., April 1, 1887. Dr. O. H. Adams, who arrived in a few moments, found that the ball had entered over the liver, and after a careful search found it lying under the skin of the left flank.

I saw her at 2 P.M. The wound of entrance was over the ninth rib, four and a half inches above the level of the navel, and three and three-fourths inches to the right of the median line. Skin not burned. The ball was located eight inches to the left of the median line, one and a half inch above the level of the navel. There was moderate tenderness over the entire belly, hepatic dulness not changed, stomach resonant from fifth interspace, no cough, no râles, vocal fremitus normal; renal dulness began at tenth rib on left side, and was the same on the two sides. There was severe pain in the left shoulder. She had vomited a drachm and a half of clear, bright blood, she told me, immediately after the accident. About a pint of urine, the first since the accident, was drawn by the catheter. It was not bloody. Pulse, 104; respiration, 30. No material rise of temperature. As after consultation with Drs. Adams and Bidwell it was deemed almost certain that the belly was invaded by the ball, exploratory laparotomy was advised, consented to, and begun at 3 P.M., and lasted nearly three hours, with every antiseptic precaution. The ball was easily removed, just under the skin. Neither wound could be traced positively into the belly. On opening the belly neither blood nor serum escaped; nor was any extravasated food or fæces noticed. There was no peritonitis. Two fingers were passed in and an effort made to discover the wound of entrance or exit, without any being revealed by touch. The wound was then enlarged and the stomach drawn out. A small round wound near the pylorus was found and was closed by four sutures (Lembert) of the finest iron-dyed silk, a round, ordinary sewing-needle being used. This wound was practically closed by the pouting mucous membrane. As the ball had entered the stomach, search was made for the necessary wound of exit. None was to be found, but the manipulation showed that a small amount of bloody serum existed in the belly, and a large area of extravasation was seen in the mesentery. But little blood had escaped into the peritoneal cavity. The mesentery was carefully torn through and a small artery tied. The chief bleeding came from a hole nearly one-eighth of an inch in diameter in a large vein, so large and lax that at first I thought it the vena cava, but its position just below the head of the pancreas convinced me that it was a large superior mesenteric vein just before it forms the portal vein. After much difficulty I seized it with hæmostatic forceps and placed a lateral ligature of chromicized catgut on it.

The anterior border of the liver had been scalloped by the ball, but as there was no bleeding it was let alone. In addition a large wound in a coil of small intestine in the left flank had been found. Ten Lembert sutures were used in closing it.

Returning now to the stomach, a very careful search was again made for the wound of exit. It was found obscured by a slight coating of blood. This was closed by three black silk Lembert sutures.

A systematic investigation of the entire bowel from the stomach to the sigmoid flexure showed no other wounds. The left kidney was badly lacerated, and was immediately removed by peeling it out of its capsule and tying the pedicle with a stout silk ligature. A rubber drainage-tube was inserted through the wound of exit into the abdominal cavity.

The wound of entrance was cleansed and closed by three stitches, and the wound of exit by two. Sublimate gauze, rubber dam, and a wide flannel bandage completed the dressing.

During the day following the operation suppression of urine was threatened, only ℥ iijss. being secreted. This was quite albuminous. The next day, however, the amount rose to ℥ xxiv. and on the third day to ℥ xl, and

the albumen gradually disappeared. For the first three days nothing was given her except a little cracked ice, ice-water, and a little whiskey and champagne. On the fourth day peptonized milk in frequent but small quantities was allowed, with rectal enemata of the same, and later other liquid foods. Menstruation appeared regularly when due on April 3d, and saw its usual course of four days. On the 8th she had a chill lasting twelve minutes, and the temperature rose to 104°, but as the most careful examination revealed no spot of special tenderness, no dulness, no fluctuation, and, she was almost, it seemed, in *articulo mortis*, it was not deemed prudent to reopen the belly.

The next day, the 10th, she improved somewhat; on the 13th she had another chill with a temperature of 105.4°, had vomited several times, and also had some involuntary evacuations. But as her condition was fair —pulse, 136, temperature, 101.4°—the belly was reopened and explored. The intestines were bright and glistening, and no peritonitis existed.

Surgical bimanual examination revealed no pus or special tenderness at the site of the removed kidney, or, so far as it could be located, at the intestinal wound. No shock followed. The next day (14th) she had two bloody motions, and gradually failed, dying on the 15th day.

The autopsy by Dr. H. C. Smith revealed general peritonitis, except in the pelvis; but no free pus was found anywhere. Only one wound was found in the stomach, near the pylorus, and this was healed, the four stitches being seen in place. The blood in the mesentery was disintegrating and suppurating, though no abscess existed, nor was there any free pus in the peritoneal cavity. The suppuration was chiefly marked along the mesenteric attachment of the intestine. On the other side of the mesentery, corresponding in position to this wound, was a spot in the bowel-wall as large as a five-cent coin, which was gangrenous, and in its centre were two perforations of the bowels. No wound was found except that discovered at the operation. No trouble was found at the site of the removed kidney. Although it was nearly ten hours from the accident to the time when the intestine and stomach were sutured, no intestinal or gastric juice or fluid escaped, though the intestinal wound was so large and vomiting occurred three times.

The kidney, I believe, has never before been removed at a laparotomy for gun-shot wound; but it was clearly the right thing to do. The day following the operation the remaining kidney worked badly, only three and a half ounces of albuminous urine being secreted. But the next two days dispelled all anxiety on this score, the urine rising to twenty-four and forty ounces respectively, and the albumen soon disappeared. The early and marked compensatory enlargement of the right kidney is also of great interest and importance, though, of course, now well known to follow nephrectomy.

Dr. P. S. Conner, of Cincinnati, said that when an operation is required we are all agreed as to what should be done. But the most important point to determine is, when should the abdominal cavity be opened? There is no single symptom or collection of symptoms to be relied upon. If, however, the temperature remains subnormal four, five, or six hours, penetration and perforation may be considered almost certain. Diagnostial laparotomy is admirable in certain cases. Many of these cases necessarily involve legal investigation, and it is a very simple matter to show that death resulted not from the original injury, but from the surgeon's knife. While it is wise to lay down the general rule that penetrating wounds of the abdomen, and still more, perforating wounds of the viscera, should be submitted to laparotomy, at the same time we are not justified in laying this down as a hard-and-fast rule.

Dr. Moses Gunn, of Chicago, thought that we are now all prepared to say that laparotomy under these circumstances is a proper measure to pursue, but the only question is how to make the diagnosis? We have, as has been said, no positive signs of visceral injury. He held that we are fully warranted in saying that we may resort to laparotomy for purposes of diagnosis when we are in doubt.

Dr. T. Richardson, of New Orleans, gave some statistics of the Charity Hospital of New Orleans, showing that in the last five years there had been thirty-one cases of penetrating knife-wounds of the abdomen, of which twenty-four recovered and seven died. There were thirty-three cases of gun-shot wound of the abdomen, with thirteen recoveries and twenty deaths. Laparotomy was performed in one of the fatal cases of gun-shot wound; all the others were treated on the expectant plan.

Dr. D. Hayes Agnew, of Philadelphia, believed that where there is a reasonable degree of evidence that there is a penetrating wound of the abdominal wall, especially if a shot wound, it is the surgeon's duty to make an exploratory incision. We are not to be deterred by the possibility of some legal technicality if the case should come into court. We are to do our duty without reference to the consequences.

Dr. J. Edwin Michael, of Baltimore, read a

Report of a Case of Ventral Hernia Successfully Treated by Operation, with a Suggestion as to the Method of Operating.

A stout woman, forty-five years of age, had a ventral hernia, and on account of the great annoyance experienced in the use of pads and bandages, she insisted on operation. March 15, 1886, a free incision was made in the median line. The sac was carefully separated from surrounding tissues, and was then emptied of its contents and opened. The sac was cut off close to the margin of the ring. Strong silver-wire sutures were passed, a little less than half an inch apart, having a hold of half to three-fourths of an inch. The sutures included the peritoneal, muscular, and tendinous structures only. These were twisted, and perforated shot employed. The wire was then cut off close. The skin and subcutaneous tissues were secured with catgut sutures. The wound united rapidly. In October examination of the wound showed it to be firmly united. The sutures could be felt, but gave no inconvenience. In his remarks the speaker stated that his object in using the wire sutures in this manner was the expectation that they would be surrounded by a mass of cicatricial tissue, making a permanent closure of the ring. As far as he was aware he had used the wire for this purpose without precedent.

A paper on "Prognosis in Sarcomata of the Breast," by Dr. S. W. Gross, of Philadelphia, was read by title and referred to the Publication Committee.

Dr. D. Hayes Agnew, of Philadelphia, read a paper entitled

The Medico-Legal Aspect of Cranial and Thoracic Wounds (Suicidal).

The study of this subject had been suggested to him by a recent case occurring in Newport, R. I. The question was as to the possibility of a cranial wound and a wound of the heart being self-inflicted. A colored man was found one morning lying dead under the breakfast-table. He had food in his mouth, and had a wound of the head and of the heart. The coroner's jury rendered a verdict of suicide, and the body was buried. Subsequently it was disinterred and the verdict reconsidered, and the conclusion reached that the man had been murdered. Suspicion then fell upon the son-in-law of the man, who had up to this time borne a good reputation. At the trial five medical experts were called for the prosecution, and their general testimony was that these wounds were incompatible with the idea of suicide. Subsequently the prisoner confessed that he had committed the murder. As this was an important question, the author had investigated it. There are two conditions resulting from injury of the head which would prevent the infliction

of a second injury. These are unconsciousness and paralysis of one or both upper extremities. Injury to the brain is not necessarily followed by loss of consciousness or by paralysis. Many cases were cited to show the truthfulness of this statement. Numerous instances of heart-injury were given in which, after the reception of the accident the individual was able to perform many acts. Cases were also given in which persons, in attempting suicide, had produced injuries of the head and of the heart. As the result of his study, the speaker concluded that it is possible for a ball to enter the brain without destroying consciousness, although for a moment it may cause mental confusion, and that a suicide may shoot himself in the head, and, after a moment, shoot himself in the heart.

In the discussion which followed, numerous cases were related in which the heart or brain had been injured and the individual had lived for some time, and had not been unconscious. Cases were also given in which both a wound of the heart and of the brain had undoubtedly been produced by the individual himself.

Adjourned until Friday morning.

(To be continued.)

Army and Navy News.

Official List of Changes in the Stations and Duties of Officers serving in the Medical Department, United States Army, from May 15 to May 21, 1887.

TAYLOR, MORSE K., Major and Surgeon. Retired from active service May 14, 1887. S. O. 111, A. G. O., May 14, 1887.

WHITE, R. H. Promoted to be Surgeon with the rank of Major, to take effect from May 14, 1887.

HALL, JOHN D., Captain and Assistant Surgeon. Granted leave of absence for one month, with permission to apply for one month's extension. S. O. 74, Department of Colorado, May 11, 1887.

SUTER, WILLIAM N. Appointed Assistant Surgeon, U. S. Army, with the rank of First Lieutenant, to rank as such from May 16, 1887.

Official List of Changes in the Medical Corps of the United States Navy for the week ending May 21, 1887.

CURTIS, L. W., Passed Assistant Surgeon. Ordered to the Quinnebaug.

BAKER, J. W., Passed Assistant Surgeon. Ordered to the Hospital, Chelsea, Mass.

PRICE, H. F., Surgeon. Ordered to Board Duty, Annapolis, Md.

GRAVATT, C. U., Surgeon. Detachment from Michigan revoked.

LUMSDEN, G. P., Passed Assistant Surgeon. Orders to the Michigan revoked.

SIEGFRIED, C. A., Surgeon. Ordered to the Quinnebaug.

PERSONS, R. C., Surgeon. Detached from the Saratoga.

FARWELL, W. G., Surgeon. Ordered to the Saratoga.

DIXON, W. S., Surgeon. Ordered to special duty, Baltimore, Md.

ROGERS, B. F., Surgeon. Ordered to the Marine Rendezvous, N. Y.

WELLS, HOWARD, Passed Assistant Surgeon. Ordered to the Jamestown.

WISE, J. C., Surgeon. Detached from the Jamestown.

HARVEY, H. P., Surgeon. Ordered to the Iroquois.

WAGGENER, J. R., Surgeon. Detached from the Iroquois.

WHITE, S. STUART, of Frederick, Md. Commissioned Assistant Surgeon in the Navy, May 19th.

Medical Items.

CONTAGIOUS DISEASES—WEEKLY STATEMENT.—Report of cases and deaths from contagious diseases reported to the Sanitary Bureau, Health Department, for the week ending May 21, 1887:

	Cases.	Deaths.
Typhus fever	0	0
Typhoid fever	6	3
Scarlet fever	68	6
Cerebro-spinal meningitis	3	3
Measles	79	13
Diphtheria	115	63
Small-pox	29	7
Yellow fever	0	0

SOOTHING MIXTURE FOR CONSUMPTIVES.—On page 563 of THE MEDICAL RECORD for May 14th is published a formula, entitled "Soothing Mixture for Consumptives," of which the dose is stated to be "a tablespoonful every two or three hours." A tablespoonful would represent about four and one-half grains of opium. Obviously a teaspoonful is meant.

MINERAL WATERS OF THE UNITED STATES.—We find in the *Therapeutic Gazette* (March, 1887) the following statement, compiled from the report of Dr. A. C. Peale, in the "Thirty-second Bulletin of the United States Geological Survey." In this report Dr. Peale mentions 2,822 localities of mineral springs. "In the Northern Atlantic States there are 405 localities and 637 individual springs; in the Southern Atlantic States, 371 localities and 1,048 individual springs; in the Southern Central States, 1,201 localities and 1,911 individual springs; in the Northern Central States, 601 localities and 1,276 individual springs; in the Western States and Territories, 722 localities and 3,949 individual springs; making a total of 8,821 springs. But a small proportion of this immense number of waters has been analyzed. Thus, out of nearly 4,000 known mineral springs in the Western States, only 132 have been studied by the chemist, and only 18 have been used as health-resorts.

NOTHNAGEL ON BATHS IN TYPHOID FEVER.—In a recent clinical lecture Nothnagel says: "Our views regarding the use of baths have now become clear, and we have returned to what observation had long since taught us, that eclecticism was here the right method. When I look back upon what, as a young man, I saw with Traube, I must say that Traube, without making it out as something essential, carried out in principle what we have come to after twenty years of struggles and turnings aside, viz., that Traube did not treat all his cases after a routine method, after a fixed plan, but that individualizing his cases he treated them sometimes with warm, and sometimes with cold baths. A little scene that I witnessed there I can never forget. I was in Breslau, and in the Lazareth there had to treat some young soldiers, typhoid patients, strong young men. In the case of one young soldier the temperature would not go down in spite of all our efforts. He was put into a cold bath at 16° C. (60° F.) every two hours, the temperature remained at 40° C. (104° F.). A journey accidentally took me to Berlin, I spoke with Traube about this case, and he said to me: 'When you return put the man into a warm bath.' The man was put into a warm bath and the temperature went down. When we see such sharp contradictions, we come to the conviction that there is not *one* method that is alone successful, but that we must individualize."

THE ANTISEPTIC TREATMENT OF GONORRHŒA, which is being strongly urged by several surgeons in this city, is also endorsed by Dr. J. Edmund Güntz, of Dresden. He recommends the use of pencils of flowers of zinc (zinc oxide), made up without fat or any other ingredient.

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Original Articles.

THE DEFORMITY TERMED "PUG-NOSE" AND ITS CORRECTION, BY A SIMPLE OPERATION.[1]

BY JOHN O. ROE, M.D.,

ROCHESTER, N. Y.

THE nose is the central and most prominent feature of the face; and on its shape, size, and appearance, to a great degree, depends the relative facial beauty of the person.

Physiognomists emphasize the importance of the nose in the category of anatomical conformations that are indicative of special traits of character; and regard it as a measure of force in nations and individuals.

Says Wells: "A skilful dissembler may disguise, in a degree, the expression of the mouth; the hat may be slouched over the eyes; the chin may be hidden in an impenetrable thicket of beard; but the nose will stand out 'and make its sign' in spite of all precautions. It utterly refuses to be ignored, and we are, as it were, compelled to give it our attention."

Even in ancient times much attention was given to its shape and appearance. Among the ancient Persians no man who had a crooked or deformed nose was allowed to sit upon the throne. Cyrus, it is said, had an asymmetrical nose, which was made a thing of beauty through the kind assistance of his emasculated attendants. In order to secure symmetrical and handsomely formed noses, in the children of the royal blood, the eunuchs who had charge of the royal offspring were accustomed to mould their noses into perfect shape (Mackenzie).

Considered from the profile point of view alone, noses are classified according to their shape by students of physiognomy into five main classes:

1. The Roman noses;
2. The Greek noses;
3. The Jewish noses;
4. The Snub or Pug noses; and
5. The Celestial noses.

These classes of noses, considered in the light of the characteristics of the race or class to which they are peculiar, are observed to indicate prominent traits of character, as follows:

The Roman indicates executiveness or strength; the Greek, refinement; the Jewish, commercialism or desire for gain; the Snub or Pug, weakness and lack of development; the Celestial, weakness, lack of development, and inquisitiveness.

"Le nez retroussé" of the French is applied to the Celestial nose, which is simply the pug lengthened and turned upward so as to form a gentle curve from the root to the tip.

The fact that the deductions of physiognomists almost completely harmonize with the anatomical and physiological facts in the case of the last two classes becomes striking, when we consider that those deductions have been made from observation alone.

Mr. Warwick says: "A snub-nose is to us a subject of most melancholy interest. We behold in it a proof of the degeneracy of the human race."

Tristram Shandy's father, regretting his son's misfortunes, remarked: "No family, however high, could stand against a succession of short noses;" and his grandfather "when tendering his hand and heart to the lady who afterward consented to 'make him the happiest of men,' was forced to capitulate to her terms owing to the brevity of his nose."

There are three conditions that may occur during the development of the nose that give it the appearance called snub or pug. They are: (1) Excessive development of the alæ and cartilaginous portions on the end of the nose; (2) a lack of sufficient development, or a sunken or flattened condition of the base and bridge of the nose, while the end of the nose may be but normally developed; 3, the combination, to a greater or less degree, of the conditions just mentioned. This last condition is the one most frequently found.

During development the nose and parts comprising the central portion of the face, as the ethmoid and sphenoid bones, and parts adjacent, are late in developing, and are also the last portions of the face to undergo ossification. At birth the nose, at its base and central portions, is flat and nearly level with the face, but later this depressed line is replaced by a more prominent one as the nose becomes developed. From this it will be seen that anything interfering with the proper development of these parts so as to cause them to remain in their infantile condition, while the end of the nose undergoes due development, will give the nose a snubbed and unsightly shape.

The best developed and most beautiful noses are one-third the length of the face. But noses often vary from this proportion, and in some instances an ill-formed nose is inherited, it being a special family mark. Ribot says, "that of all the features, the nose is the one which heredity preserves the best" ("Hereditary Traits," Richard A. Proctor). But in other instances it is the result of diseased conditions affecting its growth and proper development during infancy and early childhood.

There are many conditions that operate to produce this result. The principal one is obstruction of the nasal passages which cuts off nasal respiration. During the inspiratory act of respiration and deglutition, when the nasal passages are obstructed, a partial vacuum is produced in the naso-pharynx. This suction force, being exerted on the inner side of the yielding cartilaginous nasal tissues, tends thereby to draw them inward, and thus in a corresponding degree retards or prevents their normal expansion and development. This obstruction of the nasal passages may also cause an enlargement or undue development of the portion of the nose below and beyond the obstruction, especially if this obstruction is composed of firm tissues, through interfering with the return circulation. The end of the nose thus becomes engorged, the vessels distended, and a marked thickening of the tissues takes place. The importance of attention to obstructed nostrils in infants, commonly called snuffles, is thus clearly demonstrated.

All chronic affections of the nose, even when unattended by obstruction of the passages, tend to produce by sympathetic irritation more or less congestion of the vessels of the end of the nose, and, by reason of these vessels having less power of resistance, an undue distention of them takes place; the surrounding tissues become thickened, and an enlargement of the end of the nose occurs. This is very commonly observed during the treatment of nasal diseases.

[1] Read before the Medical Society of the State of New York, February 1, 1887.

This diminished resistance of the peripheral vessels explains the effect of alcohol in the coloration and enlargement of the end of the nose in "old topers," which is so often observed. Alcohol produces congestion of, or sends the blood into, the capillaries and terminal blood-vessels. Since the capillaries in the nose have less resistance than the other superficial vessels of the

FIG. 1.

face or other parts, the effect of imbibition is first shown in the end of the nose.

A crooked and wrinkled septum will have the effect to lower the contour of the nose, as well as to cause an undue arching of the palatine vault.

A snubbed appearance may be given to the nose by injuries to its bridge or base, and also by ulceration and necrosis of the bones of the nasal chambers, especially the vomer, resulting in the removal of the support to the centre of the nose, which then falls inward.

The operation for the correction of the deformity under consideration is easily performed, although I can find no record of it, and have no knowledge of its having been proposed or performed.

It may be classed about the same as the operation for strabismus, and, like many other operations, is mainly to improve the personal appearance of the individual.

The operation consists in the removal from the end of the nose that tissue which is in excess, or which is disproportionate in amount to the other portions of the nose. In other words, we are to make the nose symmetrical from one end to the other.

In cases where the bridge is low and undeveloped, if the end is lowered, made smaller, and brought down so that the top of the nose forms a straight line from its

FIG. 2.

base, or junction of the frontal and nasal bones, to the end, the nose ceases to be unduly noticeable or unsightly; and, although the nose will be smaller, it will appear much larger than before by reason of its being symmetrical and proportionate throughout.

The nose does not appear ugly by reason of the fact that its size is disproportionate to that of the face (for noses vary greatly in this respect), but by reason of the disproportionate relations to one another of the different parts of the nose itself.

In those cases in which the deformity consists in an

FIG. 3.

FIG. 4.

undue enlargement of the end or cartilaginous portion of the nose, while the bony framework is normally developed, it will be seen that the main portion of the nose is straight until we come to the enlarged end, which suddenly tilts upward. Even in this class of cases it is not the end of the nose that really appears too large, but it is the base or bridge that appears too small or depressed.

This fact is shown by the foregoing illustrations, made from photographs taken in each case shortly before and shortly after the operation.

In Fig. 1 the bridge of the nose appears much lower than it does in Fig. 2, although it is of the same height. This is also true of Figs. 3 and 4.

The expression of the face in Fig. 2 is decidedly different from that of the face in Fig. 1. The same is also true of Figs. 4 and 3. This change is due entirely to the alteration made by removing the excessive tissue in the end of the nose. It will also be observed that in the case of the boy, excepting the nose, the features are the same in both pictures; and so in the case of the girl. This can be very easily demonstrated in the foregoing illustrations by comparing the shapes of the noses before and after the operation.

The operation is performed as follows: We first deaden the sensibility of the interior of the end of the nose by cocaine (general anæsthesia being unnecessary) and then brightly illuminate this part.

If the tissue is to be removed from that portion where the mucous membrane is not too firmly adherent, the membrane should be dissected back, to be replaced after the operation.

The end of the nose is turned upward and backward, and held with a retractor by an assistant; then sufficient of the superfluous tissue is removed or dissected out to allow the nose to conform to the shape that we desire. Great care must, however, be exercised not to remove too much tissue, and also not to cut through into the skin, lest we may have afterward a scar or a dent in the external surface of the nose.

In some cases no after-treatment is required, but in others it is advisable to mould a saddle or splint, as it were, to the top of the nose, so as to make it, while healing, assume the shape we wish to obtain.

In some instances the large and unsightly end of the nose is not due to an excessive tissue but to a malformation of the cartilages of the alæ, bulging outward with a corresponding concavity on the inside.

These noses can be very readily moulded into a handsome shape by cutting, with a small tenotomy knife, through these cartilages, in different places, sufficiently to destroy their elasticity. Then by inserting a silver or hard-rubber tube, of the proper size and shape, into the nostril, and conforming the saddle to the outside of the nose, we have it encased in an outside and inside splint that compels it to conform to the exact shape we desire.

While performing this operation and moulding the nose into shape, we must not neglect to preserve the nasal passages free and unobstructed.

Thus far I have performed this operation on five persons. I have, however, illustrations of but the last two, although all have been successful. With the first two patients it did not occur to me to have photographs of the nose taken before the operation, and the third patient would not permit it.

A Suggestion for the Suppression of the Masturbation Quacks.—A correspondent writes us: "Having repeatedly seen articles in The Record calling attention to quackery and the demoralizing effects of the publications sent by mail, broadcast, to almost every book-keeper, cashier, and to business men generally in the land, and having been consulted many times by young men of this class who have been 'worked' by different parties, I can but observe that articles of this class in The Record do no good unless the profession as a whole is willing to move in this matter and stop the evil. This, it seems to me, can be done only in one way, viz., by calling the attention of the 'Post-office Department' to this use of the mail." Another correspondent states that a certain Buffalo quack floods the neighboring cities of Canada with insanity-breeding literature.

MIDDLE MENINGEAL HEMORRHAGE—ITS TREATMENT BY TREPHINING AND COUNTER-OPENING OF THE SKULL FOR DRAINAGE—WITH REPORT OF A SUCCESSFUL CASE.[1]

By CHARLES A. POWERS, M.D.,

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As a contribution to the subject of cranial surgery, Mr. Chairman, I beg to present the following case of middle meningeal hemorrhage—interesting because of the extensive clot, the implication of the basis cranii, and the employment of an operative measure hitherto adopted but little, namely, a counter-opening in the skull with thorough cranial drainage.

Frank M——, twenty-eight years of age, a native of the United States, a barber by occupation, was brought to the Chambers Street Hospital in an ambulance at 11.55 P.M., November 22, 1886, with a history of having been found in an unconscious condition on the Bowery sidewalk about fifteen minutes previously.

On admission he was comatose and could not be aroused. His pulse was 60 per minute and full, his respiration 15 and normal in character, temperature 98°. The pupils were both dilated, equal, and responsive to light. The plantar reflexes were preserved on both sides. At times the patient would move slightly in bed, but it was not noticed that he moved one extremity less freely than the other. There were no wounds or other evidences of injury to be found on the body at any point. There was moderate hemorrhage in the right auditory canal. The breath had a strong odor of alcohol. About four ounces of urine was withdrawn from the bladder; this was negative in character. An ice-cap was applied to the head, and one-half hour after admission there was a single attack of vomiting. This was free and of a projectile character.

I saw him for the first time at 11 A.M. the following day. His pulse was then 70, respiration 16, temperature 99.5°. He was semi-conscious, and when aroused would give his name and address and stupidly answer questions. He could give no account of his injury; remembered drinking with companions the night before. On being asked to move his arms and legs he would do so, but the movements on the left side were less free than on the right. Pricking the extremities, both upper and lower, with a pin, elicited rather more decided movements on the right side. There was no anæsthesia. The tongue did not deviate and there was no facial paralysis. The pupils were normal. The discharge from the right ear continued; it was now rather more thin and scanty than when the patient was first seen. Careful palpation of the scalp revealed nothing. The disability of the left arm and leg, associated with the discharge from the right ear, led me to suspect intracranial hemorrhage, but I thought it well to delay a few hours in hope that additional symptoms might make their appearance. The external auditory meatus was washed out and packed with iodoform gauze, and the ice-cap reapplied.

During the afternoon his condition was slightly improved, but this was only temporary.

During the night he was restless; there was at times slight delirium alternating with semi-stupor, but the patient could at all times be roused to consciousness.

On the morning of the 24th, thirty-six hours after the injury, the pulse was 80, respiration 18, temperature 99°; the patient was perfectly rational. There was complete paralysis and anæsthesia of the left upper extremity, also a slight degree of fluttering on the left side of the face. The patient said he did not feel a pin-prick as acutely on the left side of the face as he did on the right. The tongue did not deviate; the right pupil was a little larger than the left; both responded to light. There was no

[1] Read before the Section on Surgery of the New York Academy of Medicine, April 11, 1887.

aphasia. The scalp in the occipital and the back part of the right parietal region had a rather "pulpy feel." The serous discharge from the right ear continued, and there was now an area of ecchymosis over the right mastoid about the size of a silver quarter.

In the absence of Dr. William T. Bull, the surgeon in charge, Dr. R. F. Weir saw him in consultation, and he agreeing with me in the diagnosis of meningeal hemorrhage, and concurring in the advisability of operative interference, I proceeded as follows, the strictest antiseptic precautions being observed throughout:

Ether having been given, the head was completely shaved and the bregma located by means of two straight strips of thin bass-wood, the first or alveolar mastoid passing from the alveolar process of the upper jaw to the apex of the mastoid process, the second or auriculo-bregmatic intersecting this at a right angle, and passing through the external auditory meatus to the vertex. Here a point was marked with an aniline pencil, and

FIG. 1.

one and three-quarters inch behind this a second point marked, locating the commencement of the fissure of Rolando. Its termination was found just behind the auriculo-bregmatic line, on a line parallel with the alveolar mastoid, but passing through the apex of the lambdoid suture. From the commencement of this fissure in the median line a line was drawn parallel with the auriculo-bregmatic, and midway between these, about two and one-quarter inches from the vertex, a point was marked on the right side of the head, approximately locating the motor area for the left arm. Here a free crucial incision was made in the scalp, and the tissues found markedly congested. On reflecting back the flaps there was found to be a fissure in the parietal bone. This ran antero-posteriorly three inches from the median line of the vertex, and was about one-sixteenth of an inch wide. Blood was oozing through this fissure. A trephine three-quarters of an inch in diameter was applied over the fissure, rather more above than below it, at a point where a line drawn from the commencement of the fissure of Rolando to the external auditory meatus would intersect the fissure in the skull (Fig. 2, *A*). A button of bone was removed, and a large jelly-like clot discovered beneath it. Bone was taken away by the rongeur forceps over an elliptical area measuring three inches antero-posteriorly by one and one-half inch at its greatest width (Fig. 2, *D*). This enlargement was made from the trephine hole, principally in a direction downward and forward. The clot was now cleared out by the handle of a teaspoon, the finger, and irrigation, and was found to extend over a superficial area measuring six and one-quarter inches from before backward, and three and one-half inches from above downward. At its centre it compressed the brain to such an extent that the dura was one and three-quarter inches from the inner table of the skull. On reaching the dura it was found to pulsate and to be intact; there were many oozing points, and about opposite the centre of the skull-opening there was sharp arterial hemorrhage. Owing to the distance of the dura from the skull, and the smooth, yielding surface presented by it, it was found difficult to seize the bleeding points. They were finally ligated, however, after being caught up by a clamp, and the cavity thoroughly irrigated with a warm 1 to 6,000 solution of mercuric bichloride.

The fissure in the parietal bone, above mentioned, extended beyond the limits of the incision, both in front and behind, and was not followed out (Fig. 2, *C C*). The large cavity between the dura mater and the skull extended some three inches behind and below the skull-opening. Obviously this cavity would not drain. Accordingly, at the suggestion of Dr. Weir, I trephined a counter-opening for drainage at the lower and posterior limit of the cavity, just above the point where the lateral sinus crosses the lambdoid suture (Fig. 2, *B*). The edges of bone were then smoothed off, the cavity thoroughly irrigated, and a soft rubber drainage-tube inserted through its entire length, emerging at the posterior counter-opening.

There was still some oozing from the dura, and the cavity was moderately packed with strips of iodoform gauze, one yard by one inch. No attempt was made to sew up any of the scalp wounds; antiseptic gauze was put beneath them at all points, thus assuring perfect drainage. A large dressing of bichloride gauze and borated cotton was applied to the head. The external auditory meatus was irrigated and packed with iodoform gauze.

The operation occupied something over two hours, and at its close the patient's condition was in every way good. He rallied well from the ether, and three hours later the pulse was 104, respiration 23, and temperature 98°. His bowels were moved by calomel, followed by Rochelle salts. An ice-cap was applied to the head, and he was nourished by small quantities of peptonized milk, beef-tea, and milk punch.

He passed a quiet night, and the following morning, November 25th, his pulse was 108, respiration 20, and temperature 99°. He was perfectly rational, and could feebly move the left arm, forearm, and fingers. Sensation was present in them, but was not acute. The face was about as on the previous day; the pupils were equal. The dressing was removed from the head, and the iodoform gauze withdrawn from the cavity.

The dura had advanced about half-way to the inner surface of the skull, and there was no hemorrhage from it. The cavity was washed out with one-sixtieth per cent. sublimate solution, the drainage-tube was found to be free, and was left in place. The cavity was repacked and redressed as on the day before. The serous discharge from the right ear was decreasing; the auditory canal was redressed antiseptically.

8 P.M.: Pulse, 80; respiration, 20; temperature, 99°. Redressed as in the morning; dura nearly in contact with inner table. Small strips of iodoform gauze simply inserted between dura and margins of skull-opening.

November 26th (forty-eight hours after operation).—Pulse, 106; respiration, 22; temperature, 99°. Dura and skull in contact and agglutinated by plastic exudation, except at site of the tube and of the iodoform gauze about the margins of the skull opening. Tube removed, and ten strands of carbolized horse-hair substituted. Antiseptic irrigation and dressing. Discharge

from ear had ceased. Sensation and power in left upper extremity was increasing, and now almost normal. Hand-grasp nearly as firm as on the right side. The patient's general condition was in every way good. The bodily functions were normal.

November 27th.—Pulse, 80; respiration, 18; temperature, 99°. Redressed. Five strands of horse-hair removed. There had been, and was at that time, no suppuration whatever.

November 29th.—Pulse, 80; respiration, 16; temperature, 99°. All but two strands of horsehair removed. Patient sleeps a good deal, and seems somewhat stupid. Condition of wound good. Since the day of operation the ecchymosis over mastoid has gradually extended, and now occupies an area 2 × 4 inches, extending down the neck. There are no evidences of suppuration in this. External auditory canal still treated antiseptically.

November 30th.—Drain entirely removed. Pulse, 76; respiration, 16; temperature, 100°. During the past twenty-four hours patient has been stupid most of the time, but has at times had short spells of wakeful delirium. Condition of wound in every way good. Ice-cap discontinued, and patient given potassic bromide—fifteen grains every six hours.

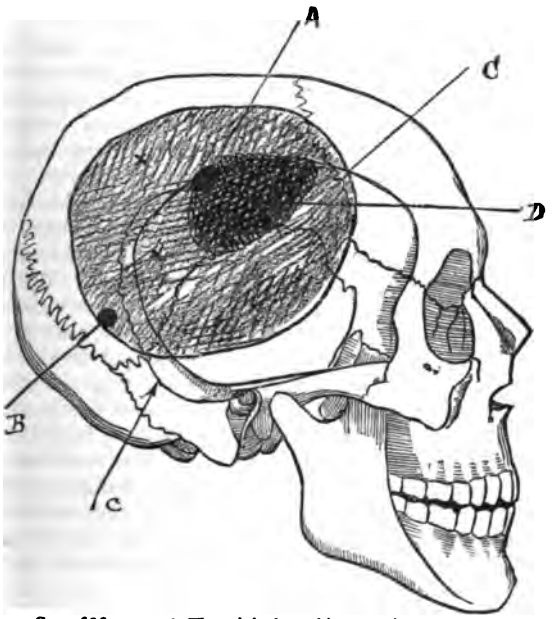

FIG. 2.—Case of M ——. *A*, The original trephine opening; *B*, posterior counter opening trephined for drainage; *C*, *C*, fissure in skull not followed out; *D*, area of bone removed; xxx, area of clot.

During the following ten days the patient's temperature ran from 99° to 101°, his pulse was 70 to 90, his respiration 16 to 22. He was slightly delirious most of the time. His urine was normal in quantity and negative in character. No lesions were found in the chest. The wounds of the head assumed a healthy granulating character, with moderate purulent discharge. No pockets could be found. His medical treatment was limited to small doses of potass. brom., tinct. nuc. vom., and dil. hydrochlor. acid.

The delirium and other untoward symptoms gradually subsided, and on December 22d, twenty-nine days after the operation, the patient was up and about the ward. Rational pulse and temperature normal, wound in a healthy granulating condition. Functions of left arm equal to those of right.

Since then his history has been uneventful. At the time of operation the periosteum was elevated from a portion of bone which was not removed, and there is now an area of necrosis about the size of a silver half-dollar (Fig. 1).

The patient is, however, in every way well. As it is not thought best for him to go back to his work until the necrosed bone comes away, he remains in the hospital, assisting the orderly in regular ward duties.

At the time of injury thorough examination of the ears was impracticable, but they have recently been tested by my friend Dr. N. J. Hepburn, whose report I herewith append: "I find in the *right ear* cicatricial tissue over the posterior half of the tympanic cavity, with a fissure in it at the inco-stapedial junction. Malleus present, but displaced backward. H. D.: w., 4″; after inflation, 3½″; tuning-fork, aerial, 8 sec.; bone (mastoid), 15 sec. The bone-conduction, in a horizontal line backward from the 'point of election,' was almost nil, but below was as above given. The *left ear* shows a moderate degree of otitis media catarrhalis chronica. H. D.: w., 30″; after inflation, 40″; tuning-fork, aerial, 35 sec.; bone (mastoid), 15 sec.; improved by inflation. I conclude that the same violence that produced the cranial fracture also ruptured the membrane and dislocated the ossiculæ, and that the hemorrhage may have been entirely due to the middle-ear lesion. The line of loss of bone-conduction in the mastoid would appear to indicate a break at that point."

The subject of middle meningeal hemorrhage has been so fully treated, during the past year, by Jacobson, of London, and Weisman, of Zurich, that I shall content myself with a brief synopsis of its more interesting features.

The sources of blood, in extra-dural hemorrhage, as given by Nancrede, are threefold: First, small vessels between the dura and the skull; second, from the venous sinuses; and third, from the arteria meningea media or its branches.

Of these, the last are by far the most common, and this frequency is rationally explained by the thinness of the bone in the region through which the vessel courses, the fact that the artery channels the osseous structures, and the exposed position of the temporo-parietal region.

Thus, of 31 cases of hemorrhage collected by Mr. Holmes,[1] 27 were from the artery or its branches.

Jacobson,[2] in an exhaustive analysis of 80 cases of middle meningeal hemorrhage, in which there were 69 deaths and only 11 recoveries, divides them into three classes:

In Class A the violence is slight. There is laceration of the middle meningeal or its branches. If a fracture of the skull be present it is slight, and limited to the side of the skull. There is compression of the brain, but little or no contusion of that organ. These cases he considers the most hopeful for trephining. He presents 27 illustrations of this class; of these, 18 were trephined, 9 were not. All treated expectantly died, while of the 18 operated upon 11 recovered.

Class B he considers less hopeful cases. There is laceration of the artery or its branches; fracture implicating the basis cranii—that is, through the middle fossa. There is some injury to the brain, but this is trivial. In this class there are 20 cases, all of which died. (The case of M——, which forms the basis of this paper, would properly belong in this group.)

Class C comprises cases probably hopeless from the first. The violence is very great. There is laceration of the artery or of some of its branches. The fracture of the skull is very extensive, perhaps implicating several bones and sutures both in vault and base. The injury to the brain is very severe. Twenty-three cases, all fatal.

The nature of the injury, or the manner in which it was received, is, I think, of minor importance. By the symptoms alone must we be guided. In hospital practice patients are frequently brought without history, and the surgeon must depend on present and developed evidences in making his diagnosis.

Weisman,[3] of Zurich, tabulates the following symptoms as pointing to middle meningeal hemorrhage.

1. Interval of consciousness between the concussion and the appearance of pressure-symptoms, somnolence, stupor, coma, death. Compression-symptoms may

[1] Surgery, vol. i., p. 575. [2] Guy's Hospital Reports, 1886.
[3] Deutsche Zeit. für Chir., vol. iv., parts 1–3.

appear at any time from fifteen minutes to eleven days after the commencement of the hemorrhage.

2. Hemiplegia on side opposite to injury. This is explained by the position of the artery exactly over the motor centres for the arm and leg. Isolated paralysis of the leg is never observed, but only paresis when the arm is paralysed, or both may be similarly affected at once. Convulsions may precede the affection.

3. Changes in the pulse—infrequency and hardness, generally increasing; sometimes the pulse becomes frequent at the last (paralysis of pneumogastric).

4. Anomalies of respiration—slow, embarrassed, stertorous breathing.

5. Vomiting.

6. Changes of the pupil; generally speaking, dilated pupils point to considerable pressure. The pupil on the side of the hemorrhage may be dilated and may not react.

7. Unilateral impairment of sensation.

8. Aphasia.

9. Disorders of the bladder and rectum.

10. Automatic movements, lying always on one side.

11. Rise in temperature (highest observed being 108.8° F.).

He thinks the diagnosis sufficiently accurate if the first four of these symptoms are present, whether there be a lesion of the skull or not, or even if there be one on the opposite side.

Aphasia, he says, points to an extension of the hemorrhage toward the front; disorders of sensibility to one behind; paralysis of the third pair of nerves to one toward the base of the skull.

This latter symptom, first explained by Mr. Jonathan Hutchinson,[1] is of much importance. Should one pupil be dilated and irresponsive, and should that be on the side opposite the hemiplegia, it would conclusively point to pressure on the oculo-motorius.

To these symptoms Jacobson adds one which I think especially worthy of note, viz.: Ecchymosis or contusion of the scalp in the temporo-parietal or parieto-occipital region, giving rise to a puffy or pulpy feel. This was present in M——.

Given, then, a case in which the evidences point to the existence of a clot, what are the indications regarding treatment? Operative procedures, and at the earliest possible moment. On this point there can be no question.

Roberts[2] says that removal and elevation of bone are needed more for liberation of blood-clot and control of hemorrhage than because of depression of bone.

Weisman presents 257 cases; of these, 147 were treated expectantly and only 12.88 per cent. recovered; of the 110 cases operated upon sixty-seven per cent. recovered; 88 of his cases were closed fractures; and of these, 59 were treated expectantly and only 1 recovered, while of the 29 trephined 9 got well.

We have already seen that in Mr. Jacobson's most hopeful class of cases not one who was denied operative procedures recovered.

In those cases in which the soft parts give no clew to the location of the lesion, where should the brain be uncovered? Fortunately the vessel and its various branches course over and about the fissure of Rolando, and here in almost every instance the seat of the compression will be found. Here, also, are grouped the cortical centres, pressure upon which directs the symptoms.

One mode of locating the fissure has been given in the history of my case, but I may briefly outline a procedure recently advised by Mr. Horsley,[3] and which he believes comparatively free from error.

He locates the upper end according to Thane—*i.e.*, a point one-half inch behind the mid-point of a line drawn from the root of the nose to the occipital protuberance. Hare, of Edinburgh, has shown that the angle which the fissure makes with the mid-line is fairly constant, and is one of sixty-seven degrees. Mr. Horsley accordingly uses an instrument consisting of a long (ten-inch) strip of soft iron, from the middle of which branches off a short (six-inch) strip, the two making an angle anteriorly of sixty-seven degrees. He lays the long arm on the middle of the head, which has previously been marked; the angle between the arms is then made to coincide with the theoretical situation (Thane) of the upper end of the fissure of Rolando; a line drawn down the anterior border of the short arm will now give the situation of the fissure perfectly accurately for the upper two-thirds of its course. He finds that the flexure which the fissure makes in the lower part of its course varies slightly but distinctly in different individuals, and says that no line can accurately determine it. Mr. Horsley does not, however, think accurate location of the lower part important.

Dr. Roberts, in his admirable article on the "Surgery of the Human Brain," already referred to, gives a table showing the exact point, over or about the fissure, which should be opened when any of the various symptoms exist, either singly or combined.

These minute directions must be indispensable when the surgeon seeks a cortical tumor; but in almost every case of middle meningeal hemorrhage the clot will be so large that the surgeon will, I think, meet some part of it if he trephine at the junction of the middle and lower thirds of Rolando's fissure. This view is supported by an analysis of the 80 cases which Jacobson presents; in 68 of these the clot is described as being large, in 6, only, small, while in 6 the size is not mentioned.

Krönlein[1] says that supra-dural hæmatomata may be put in two large classes. The first are *diffuse*, over nearly one-half of the head. The second are *circumscribed*, some part of the dura remaining adherent to the bone. The last have a sharp, well-defined outline, the periphery circular or oval. They are lenticular in shape, thickest at the centre. These circumscribed clots he subdivides into three varieties: *Temporo-parietal*, occupying the middle fossa; *occipito-parietal*, due to laceration of the posterior branch of the artery; and *fronto-temporal*, from laceration of the anterior branch (Fig. 3). He considers the temporo-parietal the most frequent, the fronto-temporal the least. He says that the site of the ruptured vessel determines the location of the hæmatoma, and he gives methodical rules for finding the clot, whether it be anterior, middle, or posterior.

He draws a line through the external auditory meatus and the lower border of the orbit, and calls this the horizontal line of the head. Then he draws a second line parallel with this into the supra-orbital margin, and on this superior line he makes one or two openings, if necessary, in his search for the clot. The first three to four centimetres behind the external angular process of the frontal will discover both the anterior and middle clots; the second opening, which shall be at the intersection of the superior line with a vertical which shall pass just behind the mastoid process, will be over the posterior clot (Fig. 3). Krönlein says: "In any given case in which the surgeon feels sure that there must be a circumscribed clot, let him make the anterior opening, and if he fail to find the clot, let him trephine again posteriorly." He cites four cases, in all of which he trephined anteriorly. In two he found the clot, cleared it out, and cured his patient. In two he failed to find the hæmatoma, and the patients died. In one the autopsy revealed a posterior hæmatoma, which the second opening would have uncovered.

When the clot is found it must be thoroughly removed, all bleeding-points checked, the cavity irrigated and well drained. Bone about the trephine-hole may be removed by the rongeur, over an area sufficiently large to admit of intelligent work in the cavity. Weisman says:

[1] London Hosp. Reports, vol. iv., p. 29.
[2] Annals of Surgery, September, 1885, p. 219.
[3] Am. Jour. Med. Sciences, April, 1887.

[1] Deutsche Zeitschrift für Chir., vol. xxiii, p. 212.

"The main object in operating is to entirely remove the extravasated blood and thoroughly disinfect the cavity which it occupied."

If there be hemorrhage from the dura, it may not be easy to check it. The membrane presents a smooth, yielding surface, which provokingly eludes the forceps. If the dura be near the skull, a needle may be passed under the vessel, but if it be at a considerable depth, as in the case of M——, this is difficult, as one is working through a small hole. Under such circumstances a fine tenaculum will hook up the dura at the site of the hemorrhage, then a blunt forceps may be applied, and the ligature slipped over this.

If the main artery be torn and bleeding below the site of the opening, it would be well to trephine again at a point one and one-half inch behind the external angular process of the frontal bone, and one inch above the zygoma. This will uncover the artery, which may then be ligated. I see no reason why this button should not be replaced. In trephining for pathological conditions, Clark, of Glasgow, and Weir, of this city, have successfully replaced the removed button. Horsley[1] recommends that the bone be finely divided, and then put back between skin and dura.

Persistent oozing from the dura may best be checked by the iodoform tamponade, as in the case of M——, and I call your attention to the fact that in his case the dura and the inner surface of the skull became coated with a layer of plastic lymph, and when they came in contact were agglutinated by it. I have several times packed scalp-wounds in which there was persistent oozing by this iodoform tamponade, and twenty-four hours later found the surfaces coated with lymph, brought them together, and obtained primary union. This procedure was originally proposed by Kocher.

The cavity must be thoroughly drained, and if this is not possible through the original opening, a counter-opening must be made in the skull opposite the most dependent point of the cavity. We would not hesitate to do this in the soft parts, why should we in bony? There is no additional risk to the patient; his danger all lies in a lack of drainage, which, as Weisman says, "results in changes in the extravasated blood which is left in the cranium."

Roberts believes drainage more essential in wounds of the brain than in other structures.

Amidon,[2] of this city, cites 115 cases of trephining, in 20 of which mention is made of free drainage. Of these 20, 18, or ninety per cent., recovered.

Finger and Lee[3] think brain-abscess should be drained as should abscess elsewhere, and report a successful case.

Krönlein says that in diffuse hæmatomata a counter-opening should be made for drainage at the one posterior point which he indicates (marked P, in Fig. 3).

I do not think, however, that any fixed point should be indicated; the counter-opening must be made, as elsewhere in the body, at the most dependent part of the cavity, and the surgeon should not hesitate to make it. Of course, he should not trephine over a venous sinus.

I have been able to learn of but seven previous cases of cranial drainage by a counter-opening in the skull; three of these, unpublished, are from the records of the New York Hospital, and I beg to acknowledge the courtesy of Drs. Markoe and Weir in allowing me to report them.

CASE I.[4]—*A case of lodgement of a foreign body in the cavities of the nose, orbit, and cranium, where it remained five months; removal by operation; subsequent trephining for pus in the brain through cranial drainage; death; autopsy.*—Dr. Noyes removed from nose, orbit, and cranium of the patient, a young man, aged nineteen, a piece of iron, four inches and a half long, leaving a hole in the roof of the orbit which would admit the end of the little finger. Drainage between eyelids, moderate suppuration, and on the eleventh day fetid pus evacuated from the brain through the orbital opening. On the fourteenth day patient developed paresis of left forearm and hand, and a counter-opening was trephined three inches above the external angular process of the frontal bone, just in front of the coronal suture. The dura did not pulsate, and pus was found at a depth of three and one-fourth inches. Through drainage, antiseptic irrigation. Pockets of pus and sloughs found all along the track of the tube. The patient retained intelligence, but grew progressively weaker, and died on the thirty-ninth day.

The autopsy revealed suppurative destruction of the orbital surface and interior of the right frontal lobe.

CASE II.—New York Hospital, service of Dr. Weir. Necrosis of frontal bone; removal of the diseased bone; dura mater not opened; frontal and suboccipital pains followed, and on the fifth day the patient, a male of forty-five years, was seized with right hemiplegia and aphasia. A hypodermic needle plunged into the dura discovered pus, and two ounces of it were withdrawn from a brain-abscess. Symptoms of compression continuing, a grooved director was passed into the abscess backward and downward to a point one inch and a half behind the ear and three inches and a half above it. Here a counter-opening was made and a drainage-tube inserted. The patient died on the following day. There was no autopsy.

CASE III.[1]—Male, aged nineteen. Pistol-shot wound of centre of forehead; course of the bullet traced through the brain; posterior trephining, removal of the bullet through cranial drainage. A rubber drainage-tube was first used, but on the seventh day a composite drain consisting of ten strands of horsehair and four of catgut was substituted for it. Four strands of the horsehair were removed on the fifteenth day. On the seventeenth day it was thought that the removal of the horsehair, as well as the presence of the remaining strands, excited irritation; accordingly they were all withdrawn Hernia cerebri and additional evidences of cerebral irritation appeared later, but these gradually yielded to treatment, and four months from the date of the injury the patient was well.

Dr. Fluhrer concludes that whenever the track of a foreign body can be followed, with reasonable certainty, to an opposite bony point, a counter-opening should be made there and through drainage established, even if the missile be not found. He thinks that a ball, tending in the line of least resistance, would seek that track, and that a later attempt to extract it might be successful.

The following case I report at somewhat greater length as it bears such marked resemblance to my own.

CASE IV.[2]—*Subcutaneous fracture of skull; contralateral paresis of face, arm, and leg, with collateral facial paralysis; aphasia; trephining, with counter-opening of skull for drainage on the eighth day; removing a colossal left-sided supradural extravasation; recovery.*—Male, aged thirty, admitted to hospital on diagnosis of fracture of basis cranii. Injury received two days before his admission, at which time there were no external evidences of injury. The patient was fully conscious, but was aphasic. There was left facial paralysis, with occasional facial spasms on the same side. The pupils were strongly contracted, but reacted to both light and distance. There was paralysis, but no anæsthesia of the right arm or leg. The day after admission right facial paralysis came on, but after this the condition remained about the same until the eighth day, when the symptoms in general all became worse, and stupor set in. Firm pressure on the left temporal region seemed to occasion pain.

Krönlein now made a diagnosis of fracture through the left middle fossa and left temporal region, with contusion of the left facial nerve in its passage through the aqueductus Fallopii; supradural hemorrhage.

[1] British Med. Jour., October 9, 1886. [2] Annals of Surgery, vol. i., p. 203.
[3] Am. Jour. of the Med. Sciences, July, 1884.
[4] Dr. H. D. Noyes: Am. Jour. of the Med. Sciences, July, 1882.

[1] Dr. W. F. Fluhrer: New York Med. Jour., vol. xli., p. 345.
[2] Krönlein: Deutsche Zeitschrift für Chir., vol. xxiii., p. 218.

He trephined over the middle meningeal artery and found a clot filling the middle fossa, and reaching back to the internal occipital protuberance. The finger in the trephine-opening could not reach the posterior limits of the clot; accordingly, to completely remove the hæmatoma he trephined again at the point marked P, in Fig. 3.

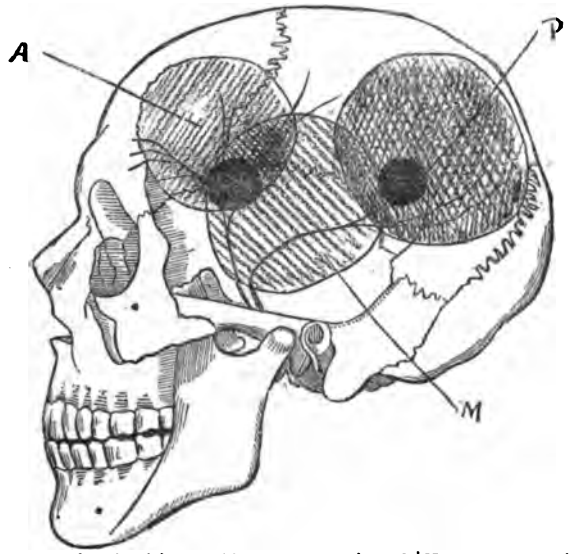

FIG. 3.—After Krönlein. *A*, Hæmatoma anterius; *P*, Hæmatoma posterius; *M*, Hæmatoma medius. The areas in black show the points at which Krönlein would trephine in his search for the clot.

He cleaned out the clot and found the dura uninjured; the cavity, left, measured six inches antero-posteriorly by four from above downward, and at its greatest depth the dura was one inch from the skull. A fissure was found in the field of operation, posteriorly, running downward.

Irrigation with a one-tenth per cent. sublimate solution, through drainage by rubber tubing, large antiseptic dressing applied.

Three hours after the operation the patient awoke and tried to speak. Two days later the facial paralysis disappeared. On the third day the dressing was changed and the dura found approaching the skull. On the fifth day all paralysis was gone, but the patient was still slightly aphasic. On the eighth day the dressing was again changed and the dura found in contact with the skull, except at the site of the drain. Tube removed. On the thirty-second day the wounds were all healed, and the patient completely well except for a resulting diplopia.

CASE V.—New York Hospital, service of Dr. Markoe. S. B——, male, aged forty-eight, admitted May 14, 1885, without history. On admission, left hemiplegia and facial paralysis were present. There was a hæmatoma over the right parietal bone, and on section a fissure was found running backward and downward. He was trephined, and a clot found separating the dura from the skull, over an area five by seven inches. At the suggestion of Dr. Weir a counter-opening for drainage was made three inches behind the first hole. The clot was only partially removed. The cavity was irrigated with a sublimate solution, drainage inserted, and an antiseptic dressing applied.

He became conscious during the operation, and for several days the paralysis steadily lessened. The cavity was washed out daily with a three per cent. carbolic solution. May 16th (two days after the operation), the temperature rose to 104° F., erysipelas appeared on the buttocks, and on May 23d (the ninth day) he succumbed to acute alcoholism and erysipelas.

The autopsy showed a small blood-clot under the dura, but no meningitis.

CASE VI.—New York Hospital, service of Dr. Weir. F. P. W——, male, aged twenty-one; admitted April 20, 1886, with a self-inflicted gunshot wound of the head. The bullet entered one inch behind the external angular process of the right orbit, and came out a little above and behind the same point on the opposite side. Both wounds were enlarged, and two pieces of bullet removed. Bullet-track traversed by a bougie à boule carrying a silk thread, and a rubber tube passed through the brain. Antiseptic irrigation and dressing. The patient retained consciousness, but his temperature steadily rose, and on the second day he died of heart-failure.

The autopsy showed fissure of both orbital plates and extensive laceration of both frontal lobes, especially the left.

CASE VII.[1]—Male, aged forty-four; gunshot wound of head. Bullet entered right squamous bone, passing through the brain and cracking the skull at the left frontal eminence. Both points trephined, the bullet removed; through drainage. Hemorrhage from the inferior longitudinal sinus the following day. Death.

The eighth case forms the subject of this paper.

In the foregoing review of cases in which through cranial drainage was employed, there are five deaths and three recoveries. In no fatal case can the issue be traced, even remotely, to the additional opening, while in each of the others a successful result is due, I think, mainly to its employment.

Regarding the form of drain to be used, soft rubber is the safest and best which we have at present. It is non-irritant, yielding, and efficient. Aseptic horsehair may well be substituted for it at the end of thirty-six or forty-eight hours as the dura approaches the skull. If the cavity is kept thoroughly aseptic these strands may be quickly removed.

In Krönlein's case he left the tube in till the eighth day, but the dura and skull were then in contact, and as the wounds had not been dressed for five days, it is safe to assume that it might have been removed earlier. If the surgeon and all of his assistants work, as they must, antiseptically, I think these cases may well be dressed often at first. Irrigation will surely prevent serous accumulation at any point.

Mr. Horsley, in his exceptionally successful cases of trephining for pathological conditions, sews up the flaps and removes the drain at the end of twenty-four hours; but this is an entirely different condition from the subject under consideration. In the former the dura has been opened, the brain tends to protrude, and Mr. Horsley allows wound exudation to accumulate between the skin-flaps and the brain to exert pressure on the brain. This exudation, he says, organizes and protects the brain in after-life.

Should the flaps be sewn up? Guided by a somewhat extensive experience in the treatment of scalp-wounds, I am free to say that at present I think it safer to leave them open. After all, the cure of the patient is the end we seek, and I think there is less risk in loosely packing the flaps with an antiseptic gauze than in suturing them. In the former case drainage must be perfect; in the latter there may be pockets of pus which can excite mischief. If the patient lives, the wounds will close over, and though healing may be delayed, we shall be satisfied with his recovery. A subsequently increased faith in the infallibility of the antiseptic closure of wounds may probably modify this view.

The prognosis in extra-dural hemorrhage, based on the statistics which I have gathered, has been bad; but I feel sure that in the future, with the steady progress in the physiology of the brain, and the rapid strides now being made in cranial surgery, early and thorough operative procedures will so modify results that this, which has hitherto been deemed a mortal lesion, will be placed high up on the list of curable injuries.

18 EAST TWENTY-FOURTH STREET.

CHILDREN do not like meat until they are five years old.—DELAUNAY.

[1] R. T. Morris: Annals of Surgery, December, 1886.

A REASON FOR MR. TAIT'S SUCCESS IN DEALING WITH SEPTIC ACCIDENTS.[1]

By ROBERT T. MORRIS, M.D.,

NEW YORK.

An incision two inches long, through the synovial membrane of the knee-joint, cannot be made with impunity, unless microbe-destroying agents are employed in a scientific way for preventing subsequent fermentation in the wound.

An incision two inches long can be made through the peritoneum of the abdominal wall almost with impunity, without the employment of antiseptics, if decided cleanliness on the part of the surgeon be observed.

Considering that inflammation beginning at the site of either wound would be due to the growth of micro-organisms, we naturally inquire why it is that nature's methods are so inefficient in preventing extension of the inflammation at the knee-joint, while they are so efficient in preventing extension of the inflammation in the peritoneal region.

We have recently been told by pathologists that when a limited number of certain micro-organisms enter the circulatory system, they are surrounded at once by leucocytes and are not allowed to multiply, and further, that these microbes and their products are discharged quickly from the body along with other blood-rubbish by the excretory apparatuses.

We learn that it is only when certain species of microbes enter the blood in such quantities that the leucocytes and excreting organs cannot easily manage them and their products, that the patient suffers from their presence.

Evidently, then, the lymphatic vessels and the capillaries of the synovial membrane of the knee-joint are not able to remove microbes from that rich pasture with sufficient rapidity, and in a short time the joint-cavity is filled with swarms of the parasites.

The peritoneum, on the other hand, by virtue of its phenomenal absorbing power, is able as a rule to remove the food of the microbes, and to turn the little parasites over to the leucocytes before they have had any opportunity to increase to a dangerous extent.

After an extensive operation within the peritoneal cavity, there is an excessive exudation of fluid from the serous surroundings, and in many cases microbes would increase in this fluid as they do in the synovial fluid, if nature were not aided in her efforts to reabsorb the microbe food.

Mr. Tait's method of aiding nature successfully in this sort of work has not been generally appreciated, but a few quotations from the reports of Wegner's experiments, when placed side by side with some of Mr. Tait's statements, will bring out an exceedingly important point in a clear way.

On page 100 of volume xx. of the *Archiv für Klinische Chirurgie* Wegner says: "Twenty-five cubic centimetres of filtered ichor (Gauche) containing numbers of bacteria were injected into the peritoneal cavity of a healthy rabbit. The animal was killed one hour and fifty-five minutes later. Blood was taken immediately from different parts of the body, and in this blood were found quantities of bacteria. The abdominal cavity was empty. There was mild hyperæmia of the serous membranes. The lymph-vessels of the centrum tendineum were completely blocked up with heaps of bacteria. For persons who doubt that in ichorous peritonitis the ferment organisms enter the circulation in remarkable quantities, there is no more comfortable way of learning something about it than by trying the simple experiment. One finds the bacteria in every drop of blood, look wherever he will, in whatever vessels."

Again, on page 100 (op. cit.), Wegner says: "Twelve cubic centimetres of fluid containing actively moving bacteria and innumerable micrococci were injected into the peritoneal cavity of a medium-sized dog. Fourteen days later the dog, having shown no signs of illness in the interval, was killed. Peritoneal cavity absolutely normal and empty. In the heart, in the upper surfaces of the kidneys, and in the marrow, were found minute punctate spots of yellowish color, composed of groups of bacteria and micrococci. In the kidneys some of the herds of microbes lay in the capillaries, especially in the

Table showing Comparative Results when Parasitical Microbes grow in the Knee-joint Cavity and when they grow in the Peritoneal Cavity.

Knee-joint. First, second, third, and fourth conditions not very dissimilar.	Peritoneal Cavity. First Condition.	Peritoneal Cavity. Second Condition.	Peritoneal Cavity. Third Condition.	Peritoneal Cavity. Fourth Condition.
A few microbes removed slowly by lymphatics and capillaries.	A few microbes present. Removed rapidly.	Many microbes present. Removed rapidly.	Vast quantities of microbes present. Removed rapidly.	Vast quantities of microbes in subserous connective tissues, blocking channels of escape (dry peritonitis).
Increasing more rapidly than they can be removed, and causing exudation of food.	Little or no exudation of food (lymph-serum).	Much exudation of food. Microbes increasing faster than they are removed.	Much exudation of food. Rapid increase of microbes, causing still greater exudation of food.	
Invading surrounding tissues in great numbers.			Invading surrounding tissues in great numbers. Channels of escape blocked.	Invading surrounding tissues in great numbers.
Microbes taken up from tissues surrounding centre of infection so continuously and in such numbers that leucocytes and excretory apparatuses cannot manage them and their products.			Microbes taken up from tissues surrounding centre of infection so continuously and in such numbers that leucocytes and excretory apparatuses cannot manage them and their products.	Nature failing to keep the patient.
Opening exits by purgation, etc., gives partial relief from the constitutional disturbance.	Opening exits by purgation, etc., clears away all microbes. Treatment, perhaps, unnecessary.	Opening exits by purgation, etc., causes reabsorption of food and removal of microbes.	Opening exits by purgation, etc., helps to quiet constitutional disturbance.	
Patient suffers great injury, and dies unless the microbe growth ceases through natural or artificial causes.	Patient suffers no injury.	Patient suffers little injury.	Patient suffers great injury, and dies unless the microbe growth ceases through natural, aided by artificial causes.	Patient suffers great injury, and dies unless the microbe growth ceases through natural causes aided by artificial causes.
Occurs after operative work, with lack of antiseptic treatment.	Occurs regularly after operative work, with or without antiseptic treatment locally.	Occurs after operative work in some cases, with or without antiseptic treatment locally.	Occurs after operative work in a very few cases, with or without antiseptic treatment locally.	Occurs rarely after operative treatment, with or without antiseptic treatment locally.

[1] Read before the Surgical Section of the New York Academy of Medicine, April 11, 1887.

glomeruli, and some of them lay in the urinary canals." In the fourth edition of his work on the "Pathology and Treatment of Diseases of the Ovaries," Mr. Tait, in speaking of the early signs of septic trouble after ovariotomy, says, on page 314: "For the treatment of the sickness I find the most efficient remedy to be thirty or forty grains of sulphate of magnesia, repeated every hour or every other hour, until the bowels move. . . . As soon as distention is visible . . . I use still more active measures to get the bowels to moving. . . . It is sometimes necessary to use drainage-tubes. Very soon after the wound is closed it will be found that the serum drains from it and the amount of fluid in a short time is simply amazing. . . . My own view about drainage is, that it will be useful only when some addition to this lymph-stream is made, greater than the outlets (natural outlets) can carry away. The fact that I have been so successful in my own operations without drainage makes me think it probable that I have *unconsciously substituted purgatives for drainage* (italics writer's); I find that in very many cases where Keith would have drained, I have purged."

Purgatives, instead of opium, for septic peritonitis after ovariotomy will save the lives of the patients, says Tait with emphasis. (I wonder why he has not assisted with diuretics.) The testimony of the two authors is, therefore, in a nutshell, as follows: Wegner shows that microbes are sent speedily from the peritoneal cavity to the excretory apparatuses, and Tait describes his own successful method of helping on the same work in the cases in which microbes are increasing so rapidly that nature unaided could not deal with them. *Tait's hydragogue purgative, therefore, amounts to a first-class antiseptic measure.*

The majority of operators prefer to employ some other modern antiseptic method, and one which will not only lessen the necessity for purgation, but which will prevent all suppuration in the wounds, notwithstanding the fact that in Mr. Tait's skilled hands his methods of work are so satisfactory.

ON THE DOSAGE OF THE GALVANIC CURRENT.

By A. D. ROCKWELL, M.D.,

NEW YORK.

The more thoroughly one studies electro-therapeutics in all its relations, medical and surgical, the clearer it becomes that the real scientific basis for the use of electricity in medicine and surgery is found in electro-physics more than in electro-physiology. The *rationale*, therefore, of the various methods of electrization, of electrocauterization, and the important department of electrolysis, can be satisfactorily understood only by those who have grasped the elementary principles of electro-physics —the laws of resistance and conductibility, and, above all, the law of Ohm. Those who have been once well-grounded in these laws of electro-physics, find that the various special problems that arise, whether of a theoretical or practical character, very quickly resolve themselves. I do not propose, however, in this presentation, to discuss the complicated subject of electro-physics, but to offer a few practical suggestions in regard to the important topic of electric dosage. In some conditions and with some individuals the difference in result between a very gentle and short application and a very strong and protracted one is nothing more nor less than the difference between agreeable success and painful failure, while in other conditions and with other individuals the difference between success and failure is measured by the difference between strong and short applications and mild and protracted ones.

There are persons who must be treated not only mildly, but at long intervals; and there are persons with perhaps the same maladies that can bear, with advantage, powerful and frequent applications; to distinguish between these classes and the various gradations that lie between the extremes of tolerance and of susceptibility is the first duty, and oftentimes the hardest study, of him who makes much use of electricity in medicine. To state in definite terms the solution of the problem of electric dosage as it relates to these various classes and gradations is a task that I by no means propose to undertake. The ability to measure with the utmost nicety the strength of the current does not solve the problem.

Such precision may be of the utmost value in the continued treatment of any given case of neuralgia, for example, but the strength then used may in no way answer for the next case, and, therefore, recorded statements of the number of milliampères used in different forms of nervous disease, especially, are by no means as valuable as one might be led to believe.

A clear appreciation of the fact that the human system

Fig. 1.

reacts to no drug with such varying susceptibility as to electricity is one of the first and most important lessons to be learned.

When we come, however, to the department of electro-surgery as represented by electrolytic action, the case is widely different. To produce certain local effects requires a certain definite expenditure of force, and the question of idiosyncrasy cannot be so much considered, although even here it is not to be altogether ignored.

In a brief consideration of this subject of electric dosage I propose:

1. To describe a new and improved milliampèremeter, and say a few words about current measurement and resistance.
2. To speak of electric dosage in its relation to some nervous disease.
3. In its relation to gynecology and electrolysis.

1. The dead-beat milliampèremeter (Fig. 1) is a great improvement upon anything that we have hitherto had for the measurement of current strength. Those ordinarily in use register but forty or fifty, and oscillate so persistently as to greatly inconvenience the operator.

This instrument, by means of two shunt-coils, will accurately measure as high as five hundred, or as low as one-tenth of one milliampère.

The dead-beat or damping effect is obtained by suspending the needle in a cylindrical block of copper—three times the diameter of the needle. The current in the copper induced by the swinging of the powerfully magnetized needle causes the number of its oscillations to be reduced to three or four, making it possible to take a reading almost instantly.

In ordinary milliampèremeters these oscillations amount to thirty or forty.

The milliampèremeter has been used in therapeutics only a comparatively short time, but for many years nervous as well as other diseases have been treated by electricity, with different degrees of success, according to the individual experience and skill employed in its use. Personally, although acknowledging the great utility of accurately measuring the strength of the current, I cannot claim greater success in the treatment of most nervous diseases, now that the milliampèremeter is employed with every application, than formerly when it was unknown, and this experience is, I fancy, common to all those who have through years of work become practically familiar with the routine of electro-therapeutical treatment. It is, notwithstanding, an immense convenience. It relieves the mind of all anxiety in regard to many minor details, and he who has once tested it will never willingly be without it. To the tyro, however, I am sure that it is a necessity.

Without it he will find himself working entirely in the dark, and a beginner should no more think of attempting serious work without his indicator of current-strength, than he should administer his drugs without his apothecary's measure. Another appliance convenient to have, but in no sense essential, is the rheostat, the utility of which I will briefly illustrate. To-day, for example, the observer notices that the current from a given number of cells is painfully felt by the patient, while to-morrow the same strength applied to the same patient may be felt but slightly. If no milliampèremeter is used, the mystery seems very great, and I know not how many times I have been asked for an explanation.

If, however, the current is measured the mystery is solved, for it is observed that when pain follows the application a greater number of milliampères is registered than when no pain is produced.

All this is explained by the fact that the skin varies very much on different days and in different physical conditions as to its conductibility.

Now if on one day, in an application to a patient of a current from thirty cells, the meter registers thirty milliampères, and on the next the same number of cells, with the electrodes applied on the same portion of the body, causes the meter to indicate but twenty, we know that the patient is offering a far greater resistance to the current on the second day than on the first. It is not essential, for practical purposes, that we know just what that resistance is, but it is desirable and interesting to know, and the rheostat supplies this knowledge with absolute exactness. In order to find out the resistance when the registration is thirty, we substitute a rheostat for the body of the patient and introduce a number of ohms in the circuit sufficient to hold the needle at thirty. If the number of ohms found necessary is three thousand, then three thousand is exactly the resistance offered by the body of the patient on the first day. To find out the resistance when the meter registers but twenty, the same process is repeated, and if the number of ohms registered is five thousand, we know that five thousand ohms is the amount of resistance offered.

The utility of the rheostat in therapeutics is more especially in the direction of enabling us to increase or decrease the current gradually and without shock. After intercalating a resistance of one thousand or more ohms we bring into action the number of cells that will probably be required. By gradually reducing the resistance in the rheostat, the milliampèremeter soon marks the degree of quantity required. To decrease the current the resistance in the rheostat is as gradually increased until the needle points to 0, an indication that the resistance equals the strength of the current. The Germans taught the use of ridiculously weak currents, and, influenced by these teachings and by a natural respect for an agent so subtle, the average degree of strength employed when first I began the use of galvanism, and for years subsequetly, indeed, was in many cases entirely inadequate. In the applications to the head ten or twelve cells were, as a rule, considered quite sufficient. Beneficial results were often seen to follow such mild treatment, it is true, and it was seldom that more was attempted, but that the dose of electricity thus obtained was exceedingly slight, and far more inefficient than was then supposed, can be readily demonstrated. The cephalic electrode was a broad, thick sponge, while the other, applied generally to the pit of the stomach, was of sponge also, but much smaller. The resistance thus offered is necessarily very great, and if the milliampèremeter is used, it will be found that the actual quantity of electricity passing through the body of the patient hardly exceeds six or seven milliampères. Now, to use a current of only this strength in applications to the nerve-centres is, as a rule, little more than child's play, and I make this assertion in remembrance of the fact that I formerly advocated the efficiency of currents even milder than this. Sometimes benefit may undoubtedly accrue from these very mild applications, but I have for so long a time observed the effects of a bolder line of treatment that I have no hesitancy in advocating it in preference to former methods.

In place of a current strength of five or six milliampères, substitute one of twenty, and the superiority of results will soon become manifest. But if, by the method in common use, twelve ordinary cells, in the treatment of the head, deflect the needle but about five degrees, it would take some forty-eight cells to give a strength of twenty milliampères, and few physicians have any such number at command as that. For this purpose the electrodes should be as large as possible—that is—broad, and flat or curved according to the part of the body to which they are applied, but with little bulk.

With electrodes such as these and a series of eighteen Leclanché cells, a current of twenty milliampères can readily be obtained in applications from the head to the solar plexus. Thirty-six cells would therefore give forty milliampères, an intensity of current seldom necessary to exceed in central galvanization.

In making these strong applications to the brain there is an element of danger which cannot be emphasized too strongly, and that is, the possibility and, indeed, the probability, considering the utterly hap-hazard way in which electricity is too frequently used, of the current becoming suddenly broken.

Even with very weak currents applied to sensitive nerves, or to the head, interruptions are as a rule undesirable, and when strong, as indicated by a deflection of the needle of twenty or more, they may painfully aggravate the very symptoms that you are endeavoring to allay. As an illustration of this most important fact I may be allowed to refer to two out of a number of cases upon which this statement is based. The first was a case of epilepsy, one which had been helped, up to a certain point only, by a persistent use of the bromides, but which had very greatly improved and finally recovered, when this treatment was supplemented by galvanization of the brain.

The attacks had been growing far less frequent, and at this time some three months had elapsed since the last. The patient was feeling exceedingly well, and this in itself was with her regarded as a guarantee of exemption; for invariably, before a paroxysm, she was accustomed

to feel far from well. With one pole at the epigastrium and the other on the head I was gradually increasing the current, until it probably indicated some fifteen or twenty milliampères.

In some way the connection was suddenly broken, and, with the characteristic cry, the patient fell over in an epileptic fit, and, as I afterward learned, one of far greater severity than usual. The other was a severe case of chorea, of long standing.

This patient was slowly but surely recovering, and had so far regained command of his lower limbs that he could walk with but slight evidences of any lack of co-ordinating power, and could use his knife and fork with ordinary readiness. About this time he inadvertently received a shock through the head of a current strength of some twenty milliampères. Results of a most unpleasant character followed. The choreic movements of the legs and arms returned in a marked degree, so that he walked with uncertain step, and could no longer feed himself. These aggravated symptoms continued for about ten days, and then began gradually to subside. I would by no means be understood to say that a galvanic shock, even though severe, will usually cause marked increase of symptoms that are subsiding under the use of an uninterrupted stable current. Such shocks are many times given without any apparently evil results. They should, nevertheless, be guarded against in every possible way, as their tendency is undoubtedly harmful. One of the diseases to which I will refer in giving more definitely my own experience in regard to electric dosage, is epilepsy, a condition in which electricity is far from being generally recognized as capable of any special service. I am not aware that in this connection the disease has been discussed in any treatise or article excepting my own. As far back as 1878 I wrote upon the subject, and only lately gave, before the New York Academy of Medicine, the results of my observation in twenty-eight cases.[1] Of these twenty-eight cases of epilepsy almost all of them were treated without the aid of accurate current measurement, since the milliampère-meter in therapeutics is of comparatively recent introduction. It is, however, possible for me to give approximately the strength of current used in most of these cases.

The range was between fifteen and forty milliampères. I have found no patient suffering from epilepsy who could not endure, without ill effects, a current of fifteen milliampères, provided the cephalic electrode covered a surface sufficiently large and was accurately adjusted, while most of them bore without discomfort a much stronger current. Seldom, if ever, should I regard more than forty milliampères desirable, and the strength that I have found most generally acceptable, and of service to my patients, has been from twenty to thirty milliampères. In chorea, substantially the same rule prevails in regard to strength of application, or would prevail, if the average age of choreic patients was not much less than that of epileptics.

The strength of current applied to the head in a case of chorea under twelve years of age should rarely exceed twenty milliampères, and generally should be about fifteen. We cannot approximate the relative dose of electricity for different ages as accurately as we can that of drugs. This observation, however, will be found to be uniformly correct: The very young bear proportionately very much stronger currents than adults. A child of three, who should, according to rule, tolerate only about one-fifth the adult dose of any powerful drug, will easily bear one-third the adult dose of electricity.

Old people bear stronger currents than those in middle life; it is, indeed, quite astonishing to observe the very marked insusceptibility of some very old people to electricity, due in some measure, perhaps, to blunted sensibility, but in a higher degree to a loss of conductibility of the tissues, and especially the skin. It will not answer, however, to presume too much in the application of electricity to the old on account of this apparent insusceptibility, as it is not uncommon to meet with patients advanced in years who, while they may feel the application of a certain strength of current but little at the time, yet are exceedingly susceptible to its secondary effects. Another disease for the relief of which the galvanic current is but indifferently appreciated is exophthalmic goitre. Without it, indeed, it is often impossible to obtain results at all satisfactory, but with it marked amelioration of the symptoms almost invariably follows, and complete recovery, many times, in cases that respond but slightly to other methods. The strength of current indicated varies according to the position of the poles. An important point for local application is the auriculo-maxillary fossa, immediately below the lobe of the ear, where but a comparatively small electrode can be used.

A strong current would produce both pain and vertigo, and five to seven milliampères is about all that will be well borne with the electrodes in this position.

As we gradually move the pole down along the inner border of the sternocleido-mastoid muscle, the strength can be increased very materially, and with a large pole at the back of the neck, near the sixth cervical vertebra, and the other on the enlargement, currents of twenty and thirty milliampères can be profitably utilized. The variation of current strength in the treatment of neuralgia and pain in general is as wide as the symptoms are varied in character and seat, and more, perhaps, than in disease in general is it necessary to carefully discriminate in the selection of the proper current.

True neuralgia (pain directly along and confined alone to the course of a nerve) calls almost invariably for the galvanic current, while the so-called pseudo-neuralgias, which are simply forms of pain occupying certain areas, and running seemingly in the direction of certain nerves, yield most readily to faradism.

Five to ten milliampères are, as a rule, amply sufficient for the relief of neuralgia about the face and head, while in sciatica it is often necessary to use as high as forty and fifty, or even more. The efficacy of very strong currents in the treatment of sciatica should be more generally recognized.

As ordinarily used it often fails to relieve, because of an insufficient current. The operator is simply self-deceived. He is using perhaps a large number of cells, freshly and properly charged, but his electrodes are of a pattern and size to offer the greatest possible resistance. Let him substitute electrodes that are broad and flexible, readily adapting their shape to every inequality of surface, and this difficulty of lack of strength will quickly resolve itself. In the treatment of paralysis, whether central or peripheral, the dose of electricity is determined by so many modifying factors that it cannot be fully discussed here. The general law, that when a muscle fails to respond to the faradic current recourse must be had to the galvanic, is now usually appreciated, but it is not so generally understood that paralyzed nerves are not to be indiscriminately stimulated by sudden shocks. Many a paralysis that might have recovered has been made permanent by such ill-directed and culpable interference. After it has been determined, by careful interrogation of the affected muscle, what is the degree of quantitative or qualitative change, it is in many cases imperative to use the continuous and not the interrupted galvanic current Especially is this true in those cases of local paralysis where responses utterly fail to be elicited by the faradic current, but are *more* readily obtained by the galvanic current than in the normal condition of nerve and muscle. In such cases mild currents of about seven milliampères, increased to twelve and fifteen as improvement increases, and applied without interruption, will succeed in lessening the irritability of muscular fibre and in restoring the lost vitality of the intramuscular nerves, upon

[1] New York Medical Journal, April 16, 1887.

the integrity of which the faradic current depends for its ability to call forth muscular contractions, far more effectually than when interruptions are attempted.

In most forms of paralysis, however, much stronger currents than these can be applied. In infantile paralysis fifteen or twenty milliampères may be used, and in the spinal paralysis of adults (poliomyelitis) twenty-five to thirty are usually indicated. In both these conditions, but more especially in infantile paralysis, the same rule should be observed as in the treatment of the form of facial paralysis to which allusion has been made—for the most part, continuous and not interrupted currents. Given a case of infantile paralysis in which reaction to faradism is entirely lost and only faintly appreciable to galvanism, it is entirely possible, by sudden shocks in the beginning, to quite obliterate the little remaining vitality and render the case incurable. In hemiplegia, again, while

FIG. 2.

electricity possesses but a limited value, it is yet capable of doing decided harm. I have at this time under observation a hemiplegic patient whose arm was in such a condition of heightened irritability that contractions to both currents were called forth far more readily than in health. He fell into the hands of one who possessed greater activity than insight, and was subjected to a series of treatments by the faradic current in which the muscles of the arm were jerked about in a most merciless manner. As might have been expected, there soon supervened an entire loss of motility, together with neuralgic pains of a distressing character. In alluding to epilepsy and chorea I spoke of central galvanization and its dosage in those diseases. Central galvanization is also a valuable method in many neurasthenic conditions, in hysteria, and in cases of melancholia. I illustrate in Fig. 2 the process which has given me most satisfaction.

The hair being thoroughly wet, a light wire-gauze helmet, lined with some soft, conducting material, is fitted as accurately as possible to the head. To this is attached the positive pole, while the negative is applied to the pit of the stomach, and a current passed varying according to the disease and individual idiosyncrasies from five to forty milliampères.

It may seem an easy thing to make use of central galvanization satisfactorily, but, like most easy things, its efficient use demands knowledge, care, and some experience, all of which are within easy reach of those who desire to utilize the method. The wide area which this helmet-electrode covers lessens by just so much the resistance to be overcome, and enables us to pass through the head a current of many milliampères, without pain or other ill results. To this end, however, the electrode must be made to adjust itself accurately to every inequality of surface, otherwise a painful concentration of current will be felt at various points, and the efficacy of the applications interfered with.

Any discussion of the subject of electric dosage would be incomplete without reference to gynecology, in which electricity has accomplished much good. Here, more than in any other department of medicine, is illustrated the great superiority of strong, and comparatively short, over weak and prolonged applications.

Much of the ill-success that formerly attended the treatment of female diseases by electricity was due to the use of too feeble currents, and the same misapprehension as to its actual working power alluded to when speaking of central galvanization exists here. With the ordinary form of small, and comparatively thick, sponge-electrode applied externally to the abdomen, and the other internally, a current from thirty-six cells will cause the galvanometer to register but twenty or twenty-five milliampères.

A current of this strength is entirely insufficient to successfully treat many uterine difficulties that experience has shown to be amenable to electrical applications, and, in order to obtain the requisite strength without resorting to the great number of cells that would ordinarily be required, electrodes of an entirely different pattern are necessary. I have for some time used an abdominal electrode similar to the one represented in Fig. 2. It was made for me by Waite & Bartlett, of this city, and can be prepared of any form and size, suitable for application to every portion of the limbs and trunk. Like the helmet-electrode, it is made of finely plated wire, and a layer of absorbent cotton used, sufficient to cover both its face and back, for the more completely a metal electrode is enclosed in its covering the greater is the quantity of current that can be utilized. Apostoli, whose experience has probably been greater than any other in the electrical treatment of the uterus and its appendages, uses electrodes made of sculptor's clay, held in place by gauze, and sufficiently large to cover much, and sometimes the whole, of the abdomen. The principle involved is simply this—the larger the electrode the less the resistance, and, other things being equal, an electrode of six square inches will yield but one-half the strength of current of one of twelve square inches.

In the treatment of uterine diseases it must be remembered that the internal is the effective, while the external is the indifferent or dispersing, electrode.

Bearing in mind, also, that the genital mucous membrane is remarkably insusceptible to painful impressions, while the skin is the reverse, the necessity of large, flexible electrodes that can be accurately adjusted is readily appreciated.

In the treatment of indurations and enlargements of the uterus, and the exudations resulting from pelvic cellulitis, direct applications frequently result in complete recovery. Currents of from thirty to fifty milliampères are indicated and should not cause the slightest pain. On the contrary, there is often instant relief afforded to an ever-present pain, as well as the more remote results as seen in the correction of painful menstruation. This is the safest and easiest method.

More rapid results follow electro-puncture, through which we get in more concentrated form electrolytic and absorbent effects. With the needles, fifty to one hundred milliampères can be used at each sitting.

If the metal electrode is applied directly, without the intervention of some covering, care must be taken not to use currents sufficiently strong to produce eschars. This mishap may occur even without the knowledge of the patient, and it is, therefore, always safer to use a covered electrode. I have seen this treatment, judiciously

and persistently carried out, melt away, as it were, not only large pelvic deposits, but in two instances dissipate a most severe and chronic sciatica that had been caused and continued by the pressure of these pelvic deposits.

In ovarian and fibroid tumors the electrolytic method is undoubtedly worthy of consideration, although the results have not as yet been sufficiently satisfactory, in ovarian tumors at least, to commend themselves strongly to authorities in the department of uterine surgery.

It is perfectly safe to use currents of one hundred and one hundred and fifty milliampères in the treatment of uterine fibroids; indeed, both Apostoli, of France, and Englemann, of this country, claim to use with advantage much stronger currents than this. Whenever, in the use of electrolysis, our aim is simply destruction, and destruction only, I see no reason why a current of even several hundred milliampères might not be freely used. It must be remembered, however, that some of the best results of electrolysis are not measured by the degree of chemical action, and that when various external tumors, such as goitre, disappear under electrolytic action, it is through a process of absorption that is set up, and not because of the destruction of tissue. In the treatment of goitre currents of forty milliampères are indicated. Absorption is hastened by the chemical changes that occur, and takes place both during and after the treatment. In most cases it is not at all observed during the operation, but goes on slowly for weeks following. Stimulation of absorption is especially marked when electricity acts on hydrocele and small cystic tumors. For their treatment a current of thirty to forty milliampères is required. In erectile tumors, where the object is to coagulate the blood, we use about the same strength as when treating cystic tumors.

AMPUTATION OF THE BREAST UNDER COCAINE ANÆSTHESIA.

By DANIEL LEWIS, M.D.,

SURGEON TO THE NEW YORK SKIN AND CANCER HOSPITAL.

A PATIENT was admitted to hospital March 17, 1887, who furnished the following history:

Mrs. K——, widow, seventy-eight years of age, always healthy until fifteen years ago, when the right clavicle was fractured, and the breast of the same side considerably bruised. After the immediate effects of the injury disappeared she noticed a lump in the breast which has never disappeared, although smaller at times and at other times larger. Four years ago an ulceration began, and on admission was about two inches in diameter. The discharge has increased, and for several weeks hemorrhages have been frequent, although readily controlled. The entire mammary gland is involved in the tumor, which is not adherent to the chest-wall however, nor are there any diseased glands in the axilla. She is quite feeble from loss of blood, and has a double cardiac murmur. There is no family history of cancer.

Here was presented a case where the removal of the tumor was demanded, and yet the advanced age and general condition of the patient rendered the administration of ether positively dangerous. It was therefore decided to attempt amputation of the breast under cocaine, although, as far as could be learned, the operation had never been performed under local anæsthesia.

On March 27th Dr. J. Leonard Corning applied one of the largest rubber-covered iron rings which he has devised for retaining the injected solution within the area of operation. The ring was made elliptical, and would have answered our purpose a little better if made of flexible material, so as to be readily adjusted to the convexity of the chest. The line of incision was traced by tincture of iodine, and injections of a two per cent. solution of cocaine *into* the layers of the skin were made, at intervals of about one-half inch, entirely around the tumor. The patient felt only the first insertion of the needle. Several larger injections were also made beneath the tumor. Less than three drachms were required.

There was no pain during the operation until after the ring had been removed and the last of the sutures were being applied, when she felt the needle in a small section of the lower flap only. There were no after-symptoms due to the anæsthetic. Twenty-five minutes were consumed by the operation. The wound was closed with the continuous horse-hair suture, which I always use for such operations, and drainage of the same material. Healing was complete in ten days.

The result of this case was sufficiently satisfactory to warrant recommending cocaine anæsthesia in any such operation where ether is contraindicated, and there is no necessity of opening the axilla. In the latter event it seems probable that some modification of Dr. Corning's ingenious apparatus could be easily adapted to the requirements of that region.

62 PARK AVENUE.

Clinical Department.

NOTE ON EMPYEMA.

DR. M. PUTNAM-JACOBI, of New York, writes: "In connection with the discussion recently held at the Academy of Medicine on empyema, the following case may be of interest: A child, five years of age, after an attack of scarlet fever, contracted an empyema of the right pleura. The diagnosis was made by the attending physician, but the mother refused to allow an operation, and the case dragged on for six or eight weeks. During this time the patient suffered from attacks of localized œdema, confined to one limb, and constantly shifting from the upper to the lower extremities, and from one side of the body to the other. There was occasionally some œdema of the abdominal walls; none of the face. The urine remained free from either casts or albumen. I saw the patient only once, twenty-four hours before death. At that time the right leg was markedly swollen and œdematous. The right pleura was evidently full of fluid; the condition of the child markedly cachectic. An operation was again proposed, but for some reason either again refused or postponed till the following day. On this day the little patient died. At the autopsy was found, besides a pleural cavity full of pus, a large thrombus in the right iliac vein, evidently the cause of the œdema of the right leg. It became then also evident that the temporary localized œdemas observed during the illness had been due to similar temporary obstructions of the principal vein of the limb. This spontaneous coagulation of blood was due to absorption of the fibrine ferment from the mass of pus, and a consequent action upon the fibrine factors of the living blood, such as usually only occurs after death."

SUBACROMIAL DISLOCATION OF THE HUMERUS.

DR. THOMAS L. STEDMAN, of New York, sends us the following communication: "The case herewith presented appears to me to be worthy of record by reason of the rarity of posterior dislocations of the shoulder, and also on account of the age of the patient. Barbara ——, eighty-four years of age, an inmate of the Home for the Aged of the Little Sisters of the Poor, is of spare build, but in good general health. One morning, while dressing herself, sitting on the bed, she stooped over to pick up her shoe, and fell, striking, as she says, the right arm between the elbow and the shoulder. She experienced at once severe pain in the shoulder, and was unable to move the arm. I saw her about seven hours after the accident. Examination at that time revealed a round, hard projection, like a ball, posteriorly, on the dorsal aspect of the scapula, near its outer extremity. Motion was imparted to the swelling on rotation of the arm, but no crepitu

could be obtained. There was a marked depression below the extremity of the acromion process, and in front of the shoulder-joint, between the coracoid process and the shaft of the humerus, a wide interval was to be felt. The arm hung by the side with the elbow a little in front of the axillary line. It was possible to approximate the elbow to the side when the tips of the fingers were brought to the opposite shoulder. Dr. Joseph O'Dwyer saw the case with me, and kindly assisted in the reduction. The latter was easily effected by downward traction, counter-traction being made with a towel in the axilla. The arm was carried in a sling for a few days, and no further trouble was experienced beyond a slight soreness on attempts at extended movements."

THE LOCAL TREATMENT OF DIPHTHERIA.

Dr. J. Henry Fruitnight, of New York, sends us an interesting communication on this subject, which the crowded condition of our columns compels us to present in abstract. As the disease presents both local and constitutional symptoms, we ought, he argues, to treat it both locally and constitutionally. Many of the remedies employed exert a local effect as they pass over the parts while being swallowed, and, in order to increase this effect, he advises patients, who are able to do so, to retain the dose for a time in the buccal cavity. "In the recent discussion of this subject, no mention was made of one remedy, formerly used for its constitutional effect, but which I have employed for its local action. I refer to the hyposulphite of soda, the use of which was suggested to me by Dr. Brickelmaier, of this city, in an informal conversation some time ago. Since then I have treated eight cases of diphtheria with this remedy, giving hourly doses of ʒj. of a solution of the strength of ʒj. to ʒij. of water. In two of these cases the pseudo-membranous deposit was very thick and tenacious. In all there was a gradual lessening and disappearance of the membrane from hour to hour. The patients retained the solution in the mouth several minutes before swallowing it. No other local remedies were employed, though the general condition of the patients received proper attention. In one case, which is now under treatment, the deposit is very great and extends downard to a considerable distance. In this case gentle local applications are made by means of a brush. I have not yet had an opportunity to use the remedy when the disease has invaded the larynx, but intend to employ it in the spray-atomizer in the first case of this kind which presents itself. I shall also use the same method when the patient is too young to hold the solution in the mouth before swallowing it. The hyposulphite of soda has also, very probably, a constitutional action, but it is to its use as a topical agent that I now specially wish to direct attention. I disclaim, however, the notion that it will cure in every case, for we all know that some cases will inevitably succumb to the disease despite any and all forms of treatment. As to the manner of making local applications, the gentler and more intelligently the local applications are made the more favorable are the results likely to be; therefore the spray-atomizer is to be preferred in all cases of the buccal and laryngeal forms of the disease. A suitable syringe, carefully used, is to be recommended for the nares and posterior pharynx. As regards the various remedies recommended for use in the spray-atomizer, I have had a greater percentage of recoveries with trypsin than with anything else."

THE EXAGGERATED DANGERS OF COCAINE.

Dr. J. R. Rankin, of Muncy, Pa., writes that he has never seen any alarming effects follow the use of cocaine in his practice, although he has employed it quite extensively. In every case, however, he first assured himself, by careful examination, that there was no heart-disease present, and if there was, he withheld the drug. He first used the remedy in asthma, in August, 1885, inserting from five to ten drops of a ten-per cent. solution into the nostrils, the dose varying according to the severity of the asthmatic paroxysms. The patient was completely relieved by the daily use of the remedy, and suffered from no unpleasant symptoms of any kind. He has had a like experience with another case of a similar nature. These patients used, on an average, from three to four grains daily. He has also employed cocaine, in the form of spray, in laryngitis and catarrhal fever, with most satisfactory results. In a case of gastritis, occurring repeatedly in the same individual, this remedy has been employed with benefit, in doses ranging from one to six grains. The symptoms following the exhibition of these large doses were, reduction of the pulse from 92 to 68, of the respiration from 22 to 15, slight difficulty in speaking, cooling of the skin, copious perspiration, and mental exhilaration. When a dose of six grains was given there was slight confusion of ideas for a few minutes. Dr. Rankin adds that he has used cocaine subcutaneously in a few cases, but likewise without the production of any symptoms of an alarming nature. He does not think that we should be deterred from using so valuable a remedy because it is poisonous in large doses, or because some have acquired the cocaine habit. Such arguments would apply with equal force against the use of opium, belladonna, and a number of most valuable remedial agents.

Progress of Medical Science.

Tuberculosis of the Peritoneum cured by Laparotomy.—Dr. Poten has published the following remarks on this subject: In a recent work on tuberculosis of the female genital organs, Hegar reports several cases of diffuse tuberculosis of the peritoneum which were cured by surgical interference, or, at least, brought to a standstill. Hegar himself has performed laparotomy on two cases of this kind with the best success. Spencer Wells, Neimann, Koenig, and others also have opened the abdomen in tubercular peritonitis, and after removing the transudation have seen cures in such cases. This fact, says Hegar, has been confirmed by too many reliable authorities to be denied; and he adds that cases of such a nature have often been regarded as mistakes in diagnosis, and it was thought that they were a disease *sui generis*, a granular, non-tubercular inflammation of this serous membrane. At the present time, however, the tubercular nature of these cases is hardly doubted. It is, with our present views on tuberculosis and its virus, indeed rather singular that by simply opening the abdomen and removing the ascitic fluid, a peritoneal tuberculosis can be cured, and doubts as to whether the disease in these cases is a genuine tuberculosis or simply a granular inflammation of some other nature, are not unreasonable as long as the tubercular nature of this affection has not been proven with absolute certainty, which can be done by the microscope, and especially by the presence or absence of Koch's bacilli. The reported cases, so far, do not show that these proofs have been brought. On the contrary, judging from Hegar's words, cited above, we would think that in making the diagnosis of this disease the principal reliance was placed on the macroscopical appearance of the peritoneum, which, in this instance, however, would hardly admit of any other explanation. Koenig mentions some cases of tuberculosis of the peritoneum, treated with carbolic acid and iodoform, which the microscope proved to be of a tubercular nature, but even in these no reference was made to the bacilli. The following case, operated on by Dr. Hartwig, is one in which the diagnosis of tuberculosis of the peritoneum has been made with absolute certainty, and is, therefore, of considerable interest: Mrs. R——, twenty-

nine years of age, multipara, last birth one year and seven months ago, was received into hospital December 10, 1885. She had always been healthy, but had swelling of lower extremities while nursing the child. After weaning it, and with the return of her menses, this swelling disappeared, but since May her abdomen commenced to enlarge. Her condition when admitted to the hospital was as follows: She is pale and emaciated; abdomen distended, especially in umbilical region and below, but not tender on pressure. Distinct fluctuation, percussion dull from two inches above umbilicus to symphysis pubis, the same on each side, which change of position does not affect. Prolapse of anterior vaginal wall; uterus mobile and not connected with any abdominal tumor. Ovaries cannot be felt. Thoracic organs normal; temperature—evening, 100.6°; morning, 98.8°. It being impossible to make a positive diagnosis, exploratory laparotomy was resorted to on December 12th. After the thickened peritoneum was incised, a clear, yellowish fluid spirted out through the opening. Slight compression of the abdominal walls was made, and almost a bucketful of ascitic fluid removed. The whole parietal peritoneum was covered with little nodules of a reddish-gray color; intestines, uterus, and ovaries, which were of normal size, were also the seat of these nodules. After all the fluid had been sponged out, and a piece of the peritoneum removed from the edges of the incision, the abdominal wound was closed with silk sutures. Patient made a good recovery, but had slight elevations of evening temperature; dressing and sutures were removed December 23d; the wound was healed by first intention, the abdomen sunken in, and she was free from pain. She left hospital on December 24th. The excised fragment of peritoneum was much thickened, and had lost its normal glossy appearance. Its surface showed numerous miliary and somewhat larger prominences, which in no place were ulcerated. Under the microscope the tubercles had a variety of forms, from the simple granulation nodule to the well-developed giant-cell tubercle with caseated centre; bacilli were found in small numbers almost exclusively within the giant-cells. Mrs. K—— came to the hospital again last summer, on account of a small abscess which had formed in the cicatrix and which healed rapidly. A very short time ago, almost a year after the operation, Dr. Poten saw her again; she had the appearance of a perfectly healthy woman; she had gained in flesh, and was so well that she could do all her housework without the least difficulty. There is no sign of any fluid in the abdominal cavity. Her abdomen, with the exception of a small ventral hernia, has a perfectly normal appearance, and is not tender on pressure. The lungs are entirely normal; she has no cough. Appetite and bowels normal. This case proves clearly that a genuine tuberculosis of the peritoneum has, to say the least, been cured temporarily by a laparotomy. Whether this cure will be permanent, the future will show. This result is so much more remarkable as no application of any disinfecting agent to the diseased peritoneum was made.—*The Pittsburg Medical Review.*

Virchow's Views on Myxœdema.—At a recent meeting of the Medical Society of Berlin, Virchow introduced the subject of myxœdema. He said (*The Lancet*) that although the London Clinical Society had collected details of one hundred and ten cases, and many had been published in France, there were records in Germany of but two or three cases, and these of quite recent date. In his visit to London last October he enjoyed opportunities, especially at St. Thomas' Hospital and the Brown Institution, of becoming familiar with the disease; and his address was largely taken up with the interesting subject of its pathology, as investigated by Professor Horsley. He had been convinced from inspection of Professor Horsley's preparations of the truth of his statement that lymphoid tissue occurs in the thyroid body; but, although accepting the fact that the blood in the thyroid veins is seven per cent. richer in leucocytes than that in the corresponding arteries, he hinted that this difference may be explained by the slower current in the veins, and did not consider the lymphoid tissue to be adequate to entitle the organ to be considered of hæmopoietic nature. As to the nature of a myxœdema, he pointed out that adipose tissue, when atrophying, undergoes mucoid change—a reversion to the fœtal state; but that myxœdema is not a mere atrophic change. On the other hand, it is the outcome of an active process of cell-growth in the cutaneous and subcutaneous connective tissue, with increased bulk, while the superficial layers of the cutis are not involved. It resembles an inflammatory rather than an active process, and he was reminded of the similarity to the condition of phlegmasia alba dolens, or pachydermia. The experimental and chemical researches of Horsley and Haliburton, which prove that extirpation of the thyroid is followed by an increase of mucin in the blood, tissues, and secretions—a condition of "myxœmia"—form a distinct advance in the knowedge of the subject; but Professor Virchow expressed himself with caution upon the theory of the function of the thyroid propounded by Horsley upon these results. Nor does the histology of myxœdema bear out the notion of its being mainly a condition due to retention of mucin; on the contrary, it points to an active irritative process. Professor Virchow next passed to consider the relations between myxœdema and cretinism, and again cited Professor Horsley's experiments on monkeys, which in a few weeks after thyroidectomy passed through a series of stages—neurotic, mucinoid, and atrophic—to death; and where, after exclusion of any nerve lesion, the phenomena were attributed to perverted nutritional changes. He called to mind the ill effects, noted long ago, of the too rapid wasting of the thyroid under treatment of goitre, by iodine—effects attributed by some to iodism, but considered by Virchow himself (*Geschwülste*, i., 114) to be due to the "goitrous cachexia." He discussed the association between goitre and cretinism, and between so-called "congenital rickets" and cretinism, with especial reference to myxœdema, adducing some interesting facts, such as that of two infants, subjects of "congenital rickets:" one presented the characters of myxœdema, and had an abnormally large thyroid; the other was small and atrophied, having no myxœdematous characters, but having extreme atrophy of the thyroid, such as described by Ord in myxœdema. He also referred to Küster's observation upon "cachexia strumipriva," and glanced at the subject of exophthalmic goitre, more by way of contrast than as illustrating any relationship between Graves' disease and myxœdema; and he concluded by admitting that although the part played by the thyroid body in myxœdema was not yet proved, it was a subject worthy of careful study. Professor Ewald, who spoke on the conclusion of Professor Virchow's paper, preferred "cachexia pachydermica" to the term "myxœdema," and suggested that in Horsley's experiments the increase of mucus in the salivary secretion was attributable to injury to the sympathetic during the operation of extirpation of the thyroid. He mentioned that recently Schiff and Herzen had observed spasmodic affections suggestive of cortical irritation to follow extirpation of the thyroid, while Albertoni and Tizzoni had noticed a great diminution in the blood-capacity for oyxgen; and he considered that such varied results proved how far we are from a knowledge of the functions of the thyroid. Drs. Wolff and Bergmann also spoke, their remarks being mainly directed to the effect of partial thyroidectomy in producing atrophy of the remainder of the body—a result which does not obtain in experiments on the healthy organ.

A Case of Obstinate Vomiting of Pregnancy, cured by feeding through the œsophageal sound, is reported by Dr. Brunniche.

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THE TREATMENT OF FIBROID TUMORS OF THE UTERUS BY POWERFUL ELECTRICAL CURRENTS.

WE have already given some notice of the method of treating uterine tumors and other diseases by very strong electrical currents, a method especially identified with Dr. Apostoli, of Paris. In a recent issue of the *Journal of the American Medical Association* Dr. Franklin H. Martin describes the technique in detail, and adds his indorsement of the method. His article limits itself to the consideration of fibroid tumors, hemorrhagic and non-hemorrhagic.

These tumors are treated by currents of electricity from a gravity or Daniell-cell battery, of which about one hundred and fifteen are needed. Other cells, like the zinc-carbon, can be also substituted. The strength of the current used is from a minimum of fifty to a maximum of one thousand milliampères, even the minimum being a stronger current than is ever employed in therapeutics. The effects produced are by the electrolytic or decomposing action, and, to a less extent, by the cataphonic action, of the current.

The two poles have a decidedly different effect. The positive or acid pole has a caustic and styptic power, very useful in hemorrhagic fibroids; but it is a power not obtained except in currents stronger than fifty milliampères. The negative pole has the effect of liquefying instead of hardening and coagulating the tissues.

The electrodes used are simple enough. That for internal use is made of platinum insulated nearly to its tip. The external electrode used by Apostoli is a mass of moist potter's clay moulded upon the abdomen. This is connected with the battery by a plate of soft metal and a conducting-cord. Dr. Martin uses, in place of the clay, a concave disk of soft metal, loosely stretched over the concavity of which is an animal membrane. The space between the membrane and the metal is filled with a warm solution of sodium chloride.

In hemorrhagic fibroids the positive pole is introduced into the uterus, the large electrode placed over the abdomen, and the current is slowly turned on. At first not more than fifty milliampères should be used for about five minutes. Subsequently the strength is increased and the duration lengthened to ten or twelve minutes. The operation has to be repeated several times. By it the hemorrhage is diminished and the tumor lessened in size. In most tumors in which the uterine canal cannot be reached a sharp-pointed electrode of platinum and iridium is introduced directly into the neoplasm via the cervical canal and connected with the negative pole. A current of one hundred and fifty milliampères may here be used.

In a third class of cases the tumor is punctured through the vaginal or abdominal wall. Here an anæsthetic and thorough antiseptic precautions are necessary. In these cases the needle, when introduced by the vagina, is insulated to within one inch of its point, connected with the negative pole, and a current of strength of five hundred to one thousand ampères is used.

The conclusions reached by Dr. Martin are as follows:

1. A means of generating a continuous current of electricity which can be increased from ten to one thousand milliampères in strength is necessary in order to obtain all the benefits of this treatment.

2. Hemorrhages from hemorrhagic fibroid tumors can be cured by the local coagulating effect of the positive pole applied inter-uterine.

3. The inter-uterine electrode, when positive, should be of unattackable metal, conforming as nearly as possible to the size and shape of the uterine canal, and having the vaginal portion insulated.

4. When the cervical canal cannot be entered a negative galvano-puncture should be made into the presenting part of the obstructing mass of the tumor and an artificial canal, which is to take the place of the impenetrable uterine canal in all subsequent treatments, be formed.

5. The intra-uterine electrode should in all cases be negative, unless there is hemorrhage or excessive leucorrhœa, when the positive pole is always required. The same patient may, however, present successive symptoms demanding the use of each pole.

6. The strength of the current should be the strongest possible consistent with the desired therapeutic effect and the endurance of the patient.

7. Cases of intolerance of high doses arrange themselves under the three following heads: 1, Hysteria; 2, enteritis; 3, acute nephritis, perimetritis or parametritis, the most tolerant being the deep uterine and profusely hemorrhagic.

8. The duration of the operation should be from eight to ten minutes, according to the toleration of the patient.

9. The number of operations is necessarily dependent upon and influenced by the result to be accomplished. A severe hemorrhage can be checked in from four to five séances, while a general reduction of the tumor necessitates many operations, varied, of course, according to size and location. In many cases simply a restoration to health and a relief from the prominent and annoying symptons must be accepted as a substitute for an actual cure.

10. The time of commencing the treatment matters but little if the tumor is not rapidly growing and no excessive hemorrhage is present. The operation should be inter-menstrual, if possible, but if hemorrhage is continuous operate during the flow. The séances should occur two or three times a week if compatible with the endurance of the patient, and should be as regular as possible.

11. Extra-uterine puncture should be regarded only as a last resort, but every means of reaching the tumor

through the uterus being impracticable, seek, if possible, to make the operation extra-peritoneal; should this in turn prove equally unadvisable, use as a final alternative the abdominal puncture.

12. Strictest cleanliness and thorough antiseptic precautions are absolutely demanded in operations connected with this treatment.

A MEDICAL HOAX.

A CURIOUS instance of the way in which news sometimes gains in its progress around the world was shown recently in connection with Bergeon's method of treating phthisis. A cable despatch from Philadelphia was printed in the Italian daily press to the effect that a physician of that city had discovered a new and infallible cure for consumption. The wonderful discovery was much discussed in the papers, and many interviews were had by enterprising reporters with prominent medical men on the subject, and all awaited with feverish anxiety the receipt of fuller details by mail. Numerous letters and cablegrams were sent to the Philadelphia physician (we quote *La Riforma Medica*), asking him to send a detailed account of his method, and some sufferers even invited him to come to Italy to relieve them of their ills.

None of the American daily papers of the date of the cablegram contained any notice of the wonderful discovery, and the matter remained a mystery until the receipt of the Philadelphia medical journals. It was then learned that some experiments with Bergeon's method had been made in the hospitals there. One of the assistants at these experiments bore the name of the alleged discoverer of the cure for phthisis, and in some way or other the cable reporter had given to him the honor of originating the method. Many of the poor victims of phthisis have been cruelly disappointed, but a few Italian journals had a sensation, and the cable companies sent some extra despatches.

HEMORRHAGE AND ANTISEPSIS.

ONE of the first rules of antiseptic surgery has always been to carefully arrest all bleeding from the tissues before putting on the final dressing. Of course, the arrest of hemorrhage from large vessels is a matter of necessity, but, if the views recently enunciated by Schede and others are correct, it would seem that a mistake has been made in spending so much time in efforts to repress all oozing from the tissues. It is now claimed that the presence of a clot in the wound, so far from being an accident to be guarded against as retarding the healing of the wound, is actually of benefit and rather favors union. Schede says that the great power of organization of the blood-clot should be utilized, and that the blood should be allowed to enter the wound, thereby filling all its crevices and sinuosities with a plastic material which will be of the greatest utility in promoting union, and will do away with the necessity of compression and drainage.

These views would appear to be based on sound reasoning, for the blood in closed wounds, such as fractures and after tenotomies, is known to be partly absorbed and in part to become organized; and, if perfect antisepsis is maintained, the clot which is formed from effused blood in open wounds should behave in precisely the same way. Of course, the most perfect antisepsis must be obtained, otherwise the blood will be a source of additional danger. But the most perfect antisepsis must be maintained in any case if success in the operation is desired.

A case illustrative of this innocuity of the effused blood is related by Dr. G. Turazza in the *Gazzetta degli Ospitali* of April 13, 1887. A man received a stab wound in the back extending about five inches through the muscles parallel to the thoracic wall. The hemorrhage was very profuse, but it was impossible to find the bleeding vessels. The wound was washed out repeatedly with a four per cent. carbolic acid solution, and then, without any pains being taken to arrest the hemorrhage, the edges were approximated by sutures and an antiseptic dressing was applied. The following morning the dressings were found saturated with blood and were changed. On the fourth day the sutures were removed, and on the eighth day there was a firm cicatrix, the wound having closed by first intention.

Some of the advantages of this method are that much time is saved, since no delay is occasioned by waiting for the oozing to be arrested, and, in most cases, the necessity of drainage-tubes is done away with. At the last French Surgical Congress this question of drainage was thoroughly discussed, and most of the speakers agreed that, when antisepsis was perfect, it was better to leave out the drainage-tubes, and ignore the presence of effused blood. When, however, the operator was not sure that perfect antisepsis could be maintained, they were all of the opinion that drainage should be provided for, since the presence of decomposing blood would, of course, render the condition of affairs only so much the worse.

A PSEUDO-MEDICAL CHARITY.

AGAINST the protests of the profession, the Presbyterian Hospital has put up a dispensary building for out-patients in the midst of one of the wealthiest sections of the city. Such a building in such a place is utterly uncalled for.

TEMPERANCE IN KANSAS.

AN esteemed correspondent, living in Neosho County, Kansas, takes exception to some remarks of THE MEDICAL RECORD, under date of February 12th, concerning the practical working of the prohibition law in that State. He says that the statements of the Osage City *Free Press*, from which we quoted, contained some truth and a great deal of error. The practical results of the old law were not what its advocates had hoped they would be. For this reason there was a tacit agreement among the Prohibitionists to take no notice of any but the most flagrant violation of the law until the Legislature met, when it was expected that a better one would be passed. The new law is now in force, and it would be very difficult, he says, for one to obtain liquor from the druggists for any purpose whatever.

Concerning the practical results of the present law, our correspondent writes: "I can point out a dozen men who formerly spent all their earnings for liquor, while their wives and children went barefoot and hungry.

Now their wives are well dressed, their children are properly clad and in school. Merchants, grocers, doctors, and all say that collections are better than formerly. But, above all, the boys, the future hope of the country, are not exposed to the temptations they formerly were. Please pause and think of it for one moment, and of all it means to fathers, mothers, sisters, wives, and children in the future.

"I could go on indefinitely, and tell you how the law prohibits, and how it has driven out of the State the saloon-keepers, the gamblers, and all that class of men. But it is entirely unnecessary. The whole thing narrows itself down to the question, Does prohibition tend to elevate or depress mankind? If the former, then it is right, and should have the support of all the foremost men of our nation, as well as of all others."

We are glad to learn that good has resulted from the enforcement of this law in some part of the State, for information which we have received from other places is by no means of the same tenor. A medical gentleman, living in one of the larger cities of Kansas, has kindly favored us with a report of his observations of the workings of the law in the cities. "Before the new law was passed," he writes, "each drug-store was practically a liquor-establishment. In most cases the liquor sold was drank off the premises, but in very many instances it was consumed on the spot behind some screen. There is none of that now. But here, as in many other towns in Kansas, whiskey is being sold openly at some saloons behind the bar. The authorities are moving, however, and will probably suppress the sales and rigidly enforce the law as they have done in Leavenworth. The result will be, that men will use liquor all the more freely in their own homes.

"In my opinion the law is, and will prove to be, a curse to Kansas. The law is not reformatory, but prohibitory; and the more rigidly it is enforced, the more determined will men be to obtain their liquor and to have it on hand in their own homes. The action of the law is, in my opinion, more degrading to the morals, and leads to more craft and subterfuge and weakening of a man's sense of honor than would free liquor even. There is certainly no appreciable lessening in drunkenness so far, and no apparent gain in prosperity. This law is, furthermore, only the entering wedge for the passage of Sunday laws of such stringency as to recall the old blue laws of Connecticut. After a time the inevitable reaction will come, and the devil will have greater riot than ever."

The correspondent whom we have just quoted is, by principle and practice, a temperance man in the proper acceptation of the term, and, in common with most medical men, is an earnest advocate of any lawful measures which will have the effect of diminishing intemperance; but, like many other enemies of intemperance, he denies the efficacy of prohibitory laws in the attainment of this object.

We have given prominence to this subject—which, however, we do not think is by any means without the province of a medical journal to discuss—because the first correspondent was "pained that THE MEDICAL RECORD should give an opinion without hearing both sides of the question." The only opinion given was that prohibition does not prohibit. THE MEDICAL RECORD has no quarrel with the Porhibitionists; on the contrary, it wishes that their efforts could ever be crowned with success, but it believes in the exercise of temperance in all things, even in the endeavors made to repress intemperance.

News of the Week.

MAINE MEDICAL ASSOCIATION.—The thirty-fifth annual meeting will be held in the Common Council Chamber, City Building, Portland, Me., Tuesday, Wednesday, and Thursday, June, 14, 15, and 16, 1887.

THEATRE-PARTY AND SUPPER TO AMERICAN LARYNGOLOGICAL CONGRESS.—Dr. George M. Lefferts gave a theatre-party and a supper at Delmonico's, on Thursday evening, May 29th, to the American Laryngological Congress. The party occupied private boxes at the Casino, and after the performance repaired to Delmonico's. The affair was a most enjoyable one throughout. The toasts of the evening were responded to in turn by Drs. A. Jacobi, George F. Shrady, D. Bryson Delavan, of New York, and Dr. S. W. Langmaid, of Boston.

GANT'S SURGERY.—By a typographical error in the review of Gant's Surgery, in the THE MEDICAL RECORD of April 16th, the name was spelled "Galt."

THE OHIO STATE MEDICAL SOCIETY holds its forty-second annual meeting at Toledo, O., on June 15, 16, and 17, 1887.

DEATH OF PROFESSOR VULPIAN.—Another distinguished French physician is gone in the person of Professor Edmond Vulpian, who died on May 18th, in the sixty-first year of his age. Professor Vulpian's name was made familiar to the medical world by his contributions to nervous diseases and to the physiology of the nervous system.

DR. THOMAS F. ROCHESTER, of Buffalo, N. Y., Professor of Medicine in the University of Buffalo, died on May 24th. Dr. Rochester was well known throughout this State, and was at one time president of the State Society.

THE IOWA STATE MEDICAL SOCIETY held its annual meeting at Sioux City on May 18, 1887.

A NEW MEDICAL COLLEGE is to be started in Iowa. Its president, according to the Iowa *State Medical Reporter*, is also president of the Iowa Medical Liberty League, an organization whose purpose is to resist the medical laws.

THREE CASES OF SMALL-POX were discovered in different parts of the city on Tuesday.

THE WOMAN'S MEDICAL COLLEGE OF THE NEW YORK INFIRMARY held its Annual Commencement on May 31st. Degrees were conferred upon a class of seven. Rev. Henry J. Van Dyke delivered the address.

ICHTHYOL has proved a disappointing and untrustworthy remedy in the experience of Dr. George T. Jackson, who has used it in twenty-two cases of skin disease.

CHOLERA IN CUBA.—Six cases of cholera have been reported as occurring near Havana.

THE MASSACHUSETTS MEDICAL SOCIETY holds its one hundred and sixth annual meeting at Boston on June 7th and 8th.

SHOULD PHYSICIANS FURNISH THEIR OWN MEDICINES?—We continue to receive numbers of letters from physicians, all having the same tenor—viz., that it would be better for both physician and patient if less work were thrown on the druggist. Dr. Daniel D. B. Beaver, of Reading, Pa., in particular, sends us an able and logical argument in this line. There can be no doubt that the sentiment of the profession decidedly favors the view that physicians should furnish their patients with medicines to a greater extent than is now the case. However, this can be overdone; the doctor cannot be a good doctor and a first-class druggist. The country practitioner and the homœopath already furnish their medicines, and the practice is not a novel one.

TAKE "THE MEDICAL RECORD."—"We sadly want a medical journal which is innocent of sycophantic obsequiousness, one which is fearless and true, and animated by love for the profession, and not for the filthy lucre which it brings."—*Hospital Gazette.*

ORGANIZATION OF THE MEDICAL DEPARTMENT OF THE HOUSE OF REFUGE.—The Board of Managers of this institution have appointed a staff of consulting physicians, consisting of Dr. Stephen Smith, President; Drs. A. A. Davis, John H. Ripley, and J. B. White; and Dr. George A. Spalding, Secretary. This medical board will soon hold an examination of candidates for the position of resident physician. The latter is to receive a salary, to reside in the institution, and to hold his position at the pleasure of the board.

A CASE OF GASEOUS GANGRENE affecting the subcutaneous cellular tissue was reported recently by Dr. H. C. Dalton, before the St. Louis Medical Society. A similar case was observed in Bellevue Hospital in April, 1878, and reported by Dr. E. G. Janeway, to the Obstetrical Society, if we remember correctly. The case occurred in a woman who had aborted at three and a half months.

ANTE-MORTEM EARTH TREATMENT.—A distinguished Philadelphia Surgeon advocates the systematic use of earth as a topical application to wounds. This is a very old treatment, but heretofore surgeons have waited until after the patient was dead before making topical application of earth.

CHRISTIAN SCIENCE.—We are in receipt of a copy of a vigorous and logical sermon preached by the Rev. Dr. David J. Burrell, of Dubuque, Ia., in which the *rationale* and the absurdities of "Christian science" are very clearly unfolded.

THE MICHIGAN STATE MEDICAL SOCIETY held its annual meeting at Lansing, Mich., May 12th and 13th. About two hundred members were present. A large number of papers were read in the different sections. The following are the officers elected: Theo. A. McGraw, M.D., Detroit, President; C. V. Tyler, M.D., Bay City, 1st Vice-President; W. J. Herdman, M.D., Ann Arbor, 2d Vice-President; G. L. Rose, M.D., Decatur, 3d Vice-President; F. J. Grone, M.D., Big Rapids, 4th Vice-President; George Duffield, M.D., Detroit, Secretary; H. B. Hemenway, M.D., Kalamazoo, Treasurer.

TRAINING-SCHOOL FOR MALE NURSES.—It is stated that Mr. D. O. Mills has given $80,000 for a building to be erected on the grounds of Bellevue Hospital to be used mainly as a training-school for male nurses. The Wood Museum will occupy the top story. The building will be erected in the rear of the college.

HOSPITAL SCANDAL IN VIENNA.—At a recent sitting of the Reichsrath, Herr Pernerstorfer called attention to the management of the Vienna Allgemeines Krakenhaus. The charges which were made were that the food is unwholesome and scanty. At times the patients are kept for days without any food at all. In the whole establishment there is only one bath, and the nurses, of whom 219 are women and 17 men, extort money from the wretched patients and ill-treat those who cannot pay.

RICHARDSON'S SYRUP OF SUPERPHOSPHATE OF IRON AND OXYGEN is made by the following formula: ℞. Syr. superphosphate of iron, sol. hydrogen peroxide (ten per cent.); pure glycerin, ää ℥ j. M. Sig.: 3 j. to 3 ij. t.i.d. in ℥ iij. of water.

THE APOSTOLI TREATMENT OF FIBROIDS by strong galvanic currents seems to be growing in favor, and American gynecologists will do well to pay attention to this matter. Mr. William W. Webb, on the advice of Sir Spencer Wells, went to Paris and studied the matter for several months, being under Apostoli's directions. He now writes to the *British Medical Journal:* "The upshot of all this is that I am perfectly satisfied much good has been done; many women have been gradually, and without suffering, set up in health, who would, under ordinary circumstances, have been condemned to the risks of some cutting operation. The evidence that, by the treatment of Dr. Apostoli, all the symptoms caused by these tumors can be relieved; that the tumors can be reduced in size; that patients can be made to regain their usual health, powers, and enjoyment of life, is so clear, indisputable, and convincing, that in spite of all doubt, prejudice, and insinuation, it must be accepted. Or, since it stands on no better foundation, we may make up our minds to renounce the greater part of gynecological science, reject the testimony of our senses, nullify ourselves in the fool's paradise of fatuous incredulity, and adopt the negation of a creed in the words of the old saying, 'All medical facts are lies.' Seeing what I have seen, and knowing what I know of the galvano-caustic treatment of uterine fibroids and hypertrophies, I should deem myself wanting in philosophic self-denial and Christian charity if, finding myself face to face with a woman suffering from such disease, I were to menace her with an operation of excision, either of her tumor or appendages. There is an alternative to propose, which is not, like myomotomy, capped with a chance of two to one against success (latest table compiled in Paris, 1886), and which is not mutilating or sterilizing like oöphorectomy. Even if the tumor be not eradicated, a woman enduring symptoms calling for operative interference would think herself happy, after a little patience and no more pain than is the accompaniment of her disease, to find that she had changed for the same condition of ease and freedom she might have with a pregnancy of a few months."

Reports of Societies.

NEW YORK ACADEMY OF MEDICINE.

SECTION IN SURGERY.

Stated Meeting, April 11, 1887.

A. JACOBI, M.D., CHAIRMAN, *pro tem.*

DR. DANIEL LEWIS presented an old woman from whom he had

REMOVED A BREAST UNDER COCAINE,

given according to Dr. Corning's method (see p. 634).

DR. LEWIS also reported a case of

PAGET'S DISEASE OF THE NIPPLE,

and exhibited the specimen. Cases of the disease now known in surgical literature as "Paget's disease" were sufficiently infrequent to render their description interesting and instructive.

The following history was from the records of the New York Skin and Cancer Hospital, the patient having applied for treatment, March 1, 1887. She was forty-five years of age, married, and the mother of several children (which she nursed), and had never suffered from any of the diseases of the nipple or breast incident to lactation. Thirteen months ago, without any apparent cause, the right nipple became the seat of a dry eczema, the surface and the areola becoming red and roughened, finely granular, and attended with a tingling, itching, and burning sensation. In a few weeks the nipple had become considerably larger than the other, and all these symptoms had continued with increasing severity. Darting pains radiated from the nipple toward the axilla, and a few weeks before admission enlargement of the axillary glands was first discovered. On admission the entire nipple and areola were found indurated and tender—the infiltration extending downward and outward to the diseased lymphatics, but the mammary gland in other portions was apparently free from disease. The nipple was elevated an inch above the surface of the breast, and about one and a half inch in diameter at its base.

THERE WAS NO FAMILY HISTORY OF CANCER, AND THE PATIENT'S GENERAL CONDITION WAS GOOD.

The ordinary treatment for eczema had been employed without benefit. Here, then, were presented all the features described by Paget in vol. x., p. 87, of "St. Bartholomew's Hospital Reports" as belonging to the cases in which the eruption was a *dry* one, but several of his were moist, some discharging even copiously, the fluid being clear, yellowish, and viscid. Mr. Paget's cases were fifteen in number, and their ages ranged from forty to sixty years.

Mr. H. T. Butlin made a careful microscopical study of some of them, in which he found the ducts widely dilated and frequently filled with masses of squamous epithelium, while the connective tissue was infiltrated with small cells. A later examination revealed cell-nests in the thickened portions of the nipple and areola, and much greater enlargement of the acini and ducts, the contents of which had made their way into the surrounding tissues. In this stage

THE DISEASE HAD BECOME TRUE CARCINOMA.

Mr. Thin has pronounced these cases epithelioma of the lacteal ducts, but S. W. Gross and many others hold the view of Mr. Paget, that the disease is primarily a simple eczema of the nipple, and from the long-continued irritation produces cancer, just as ichthyosis of the tongue has been shown to produce epithelioma of that organ.

Mr. George Lawson reported a case of long-standing eczema of the nipple to the London Clinical Society (*Lancet*, June 4, 1881), in which he removed the breast, throughout which the microscope revealed cancer-elements. He advocated the excision of the breast in any case where an eczema of the nipple resists all treatment.

Instances of cure of this disease have been reported by Gross and Bush, which simply prove its benign nature in the beginning of its history, or, as Hutchinson terms it, in the "pre-cancerous stage" of a form of carcinoma whose malignancy in the later stages is too evident to be mistaken by anybody.

Removal of the entire breast and axillary glands (whether diseased or not) was advised in Dr. Lewis' case, and at the present writing the patient was well.

DR. C. A. POWERS then read a paper (see p. 623)

ON MENINGEAL HEMORRHAGE—ITS TREATMENT BY TREPHINING AND COUNTER-OPENING FOR DRAINAGE.

DR. ROBERT T. MORRIS saw no reason why, in cases of meningeal hemorrhage and also in some cases of apoplexy, an operation should not be performed for the purpose of controlling the hemorrhage and removing the clots.

He believed that catgut was the only means of drainage that should be used, as there was no necessity for its removal, and thereby disturbance of the brain was avoided.

As to whether or not the dura mater should be closed was a difficult question to decide, for if the wound be left open there was danger of hernia cerebri, and if closed there was danger of pressure from pent-up serum and detritus. He then mentioned the importance of antiseptic precautions under such circumstances.

DR. FRANK FERGUSON, on invitation, spoke, and said he had seen many post-mortem cases in which he could have wished for surgical interference. He thought that perhaps sufficient stress had not been laid on the fact that hemorrhage outside of the dura makes up only a small percentage of the cases of meningeal hemorrhage. In the vast majority of cases, with fracture of the skull, the hemorrhage is in the pia mater or upon its very surface, and does not seem to be at all connected with the dura mater. Besides, it is difficult to locate the source of the hemorrhage.

Nevertheless, cases of extra-dural hemorrhage occurred, with the blood between the dura mater and the bone, and caused the death of the patients, not by laceration or destruction of brain-substance, but by pressure upon the brain.

Dr. Ferguson suggested

AUSCULTATORY PERCUSSION AS A MEANS FOR DIAGNOSTICATING FRACTURE OF THE SKULL AND LOCATING THE CLOT.

He had been able to locate a clot 3 in. by 1 in. by this means, and if relief could be afforded in such cases by surgery it would be a very great advance. He saw no good reason why these patients should not be operated upon; for the vast majority of them die under present management.

With regard to the frequency of middle meningeal hemorrhage, he believed that hemorrhage occurred more frequently at the base or in the middle fossa.

There was one point which might affect an operative procedure, and that was difficulty in removing the clot. He had found it very difficult at times to remove it at post-mortem, and certainly the difficulty would be increased when compelled to work through a small opening in the skull. He thought that there would not be any special danger on account of the continuation of the hemorrhage, because the vessel would almost certainly be plugged by a clot.

DR. AMIDON mentioned the fact that

DR. DETMOLD, NEARLY FORTY YEARS AGO,

opened an abscess contained in one of the lateral cerebral ventricles, and saved the life of the patient for several days, and that operation was done without anæsthesia and before the days of cerebral localization. The

greatest need in reference to cerebral surgery was more accuracy in cerebral localization. The basal symptoms, especially in extra-dural hemorrhage, were very embarrassing; but their existence did not necessarily constitute a contraindication to operative measures. He especially commended the counter-opening and through drainage.

Dr. Jacobi said, concerning Dr. Detmold's operation, that after the case was published it was referred to in the first volume of Virchow's "Archives" as "just such a swindling affair as we should expect from America," and in the same volume could be found Detmold's letter in reply. He would recall Schneider's last case, in which part of the brain was removed, and also a portion of the dura.

Dr. M. Josiah Roberts remarked that surgical trephining was not confined to modern times; but there was evidence that it was a prehistoric operation.

Dr. Powers said, regarding drainage, that he had used catgut extensively in soft parts other than the brain, and that in many cases it had so swollen as to occlude the opening rather than drain the cavity. He felt sure that in the cranial cavity, where the question of life or death of the patient was so imminent, the surgeon could not afford to run any risk, such as must be taken in the use of catgut for drainage. In the cranium, if the discharge be obstructed, such changes will take place as favor the rapid development of meningeal inflammation, which is much more formidable than inflammation occurring elsewhere. He should also be unwilling to use horsehair, although he regarded it as far preferable to catgut.

Dr. Robert F. Weir, Chairman.

Dr. Robert T. Morris then read a paper on

THE REASONS FOR TAIT'S SUCCESS IN AVOIDING SEPTIC ACCIDENTS.

The central point in the paper was in the statements that the same number of microbes, when introduced into the knee-joint, would produce disastrous inflammation, but when introduced into the peritoneal cavity might not produce unpleasant consequences because of the extensive absorbing surface and the ability of the emunctories to carry them away.

If decided cleanliness, therefore, be observed, the risk of introducing microbes into the peritoneal cavity was small, and the giving, as Mr. Tait does, a cathartic on the fourth or fifth day acts like an antiseptic and carries the septic material out of the system through the emunctories whither it has found its way. In other words, by the bowels was removed the septic infection which, if allowed to remain, would develop into serious, if not fatal, septicæmia.

Dr. Polk regarded the main drift of the paper as very interesting, especially to those who had practised the method with such results as to lead them to commend it highly.

But there was another point which to him had been equally interesting. Take the case of a woman who began to show signs of septicæmia, and she was purged, but the purgation was not sufficient to arrest the disease and the patient died. The autopsy revealed a focus of infection in one of the tubes. If the woman had had

PROPER DRAINAGE IN ADDITION TO PURGATION,

it was possible that she might have been saved. He would say that purgation was not to be substituted for drainage at all. It was to be employed in the milder cases of septic infection, whether drainage was effected or not; but it was not to come in competition with drainage.

The plan of treatment by purgation was an old one, and the results obtained in the old times were not satisfactory. It proved to be a failure, as was shown by the success which attended the plan of treatment laid down by Dr. Alonzo Clark. But now, when the abdominal cavity was opened and washed out, we had the ideal treatment of peritonitis.

Mr. Tait does not permit his patients to have opium, even though they have considerable pain, and Dr. Polk thought it was a very good point. But where there was peritonitis, he had not been able to rid himself of the opinion that opium was an excellent remedy; indeed, better than any other remedy at our disposal.

Dr. Wylie said that the subject was one in which he had been very much interested. So far as he knew, Mr. Tait was the first to revive the idea. But Dr. Wylie had been studying and practising from a somewhat different stand-point than had Mr. Tait. Mr. Tait had succeeded because he had used purgatives early. Dr. Wylie was satisfied that if they were given early the success would be very great; whereas, if delayed, they would do no good. His own view was that the symptoms present at the time when the purgatives were administered, such as eructations, nausea, etc., were due to *obstruction of the bowels*, and that relief followed because of the removal of the obstruction rather than because septic germs were carried off. He believed that Dr. Morris was wrong in assuming that

SEPTIC GERMS ENTER THE PERITONEAL CAVITY,

because Mr. Tait operates so rapidly and through so small an opening, which was filled by his fingers, that literally nothing got into the cavity. He also thought that Mr. Tait's success had increased since he used the drainage-tube, the object of the tube being really to keep the peritoneal cavity empty and thus promote the glazing over of the bleeding-points on the peritoneal surface, which would not take place if there was serum there. Besides, the drainage-tube was so serviceable for detecting hemorrhage.

Dr. Mundé said it seemed to him that the reason of Mr. Tait's success lay in the rapidity with which he operated, the extreme cleanliness which he observed, and opening the cavity with a small opening just sufficient to admit two fingers. Under such dexterous operating he was unable to see how any germs could get into the peritoneal cavity. Perhaps his success in other fields was not so much greater than that of others; but in his own operation he had surpassed by far all others, and Dr. Mundé could not help believing that Mr. Tait was so successful chiefly because he did so little injury in the peritoneal cavity.

He regarded purgatives as very good, given at the proper time, but he did not believe that they could be called an antiseptic measure. He did not believe that

GERMS ARE CARRIED OFF IN THIS MANNER.

He always felt, when he had put in a drainage-tube, that he had added another element of danger, although in proper cases it was a necessary and inevitable evil, and in cases of doubt he would introduce a drainage-tube.

Dr. Weir thought that the real question was to explain the success of Mr. Tait in *preventing the extension of septic infection*. He also, in common with others, believed that dexterity had much to do with the success of Mr. Tait; but, at the same time, it must not be overlooked that he was cleanly to the last degree, that he was practising what later observations had shown to be very good *antiseptic* treatment, and that he himself guards his sponges very closely. But when Dr. Weir saw him pour, from a pitcher, water into the abdominal cavity, he was unable to explain how germs were excluded. But it was doubtless true that not every germ that entered a wound created a disturbance; that

AN APPRECIABLE QUANTITY OF GERMS IS REQUIRED TO PRODUCE SUPPURATIVE ACTION.

These facts enabled him to get at something of the reasons of Mr. Tait's success. Another point was that he was not only dexterous in operating, but he was also wonderfully expert in meeting emergencies.

Dr. Wylie said that, looking at the question from his own stand-point, he thought that Mr. Tait and Mr. Bantock used antiseptics almost as completely as either he or anyone present did. Above all, Mr. Tait succeeded because he had a large brain. But with that he took the greatest pains not only to keep his house clean, but the body and bed-linen of his nurses and patients clean, and his beds could be said to be almost literally a Lister dressing. There was asepsis, if not antisepsis, and practically they both "got there just the same."

Dr. Biggs thought that Dr. Morris was wrong in his premises in the assumption that Mr. Tait has to deal with septic infection under the circumstances mentioned. He believed that all workers in bacteriology appreciated the fact that in the atmosphere of most rooms there were germs, but that they were of little danger, and that even in hospitals there was but little danger of germs entering the operation-wound when proper precautions were exercised. Watson Cheyne had shown that certainly the production of disease was in direct proportion to the number of germs introduced. But the absorbing power of the peritoneum was so great, and the surface was so large, that the number of germs that affected it was comparatively small. And the number of germs introduced by pouring in water, even though it be not sterilized, was very inconsiderable indeed. Boiling rendered water perfectly aseptic, and if continued long enough would kill all the spores. A comparatively large quantity of germs was required to produce even such a disease as erysipelas. As regards

THE ACTION OF PURGATIVES AS ANTISEPTICS,

it seemed to him questionable whether purgation would carry off germs.

Dr. J. E. Weeks expressed the belief that Mr. Tait's methods were essentially antiseptic. In water the number of germs was very slight, and, according to his observations, a large number of micro-organisms were required to begin the suppurative process. He believed that but very little of the good effect produced by purgatives could be ascribed to their power to carry off germs.

Dr. Morris, in closing the discussion, said several had remarked that purgatives could not carry off germs, and that they simply acted upon the emunctories. That was the point which he wished to make, namely, that bacteria were eliminated by the emunctories, and that these were stimulated by purgatives.

True it was that a certain number of bacteria were required to produce suppuration, etc., and the peritoneum could effectually rid itself of a large number, but that they were of importance could be made apparent by the fact that the same number when put into the knee-joint would probably kill the patient or necessitate amputation.

The Section then adjourned.

Digitaline in France and in Germany.—Physically and chemically (1) all the French crystallized digitalines are nearly identical; (2) Homolle and Quévenne's digitaline and the Codex amorphous digitaline are very nearly identical with the German *digitoxine;* (3) German digitalines are quite different from the French. Toxically (1) the crystallized digitalines—either Nativelle's, Homolle and Quévenne's, or Duquesnel's—are substantially alike, from two to three centigrammes being sufficient to kill a dog weighing twelve to fifteen kilogrammes; (2) the amorphous French digitalines—Codex chloroformic, Homolle and Quévenne's, etc.—have very sensibly the same toxic power; (3) the product sold in Germany under the name of digitoxine, and considered there the most active principle in digitalis, possesses about the same toxicity as crystallized digitalines. Two things at least seem clear from M. Lafon's investigations, namely, that German digitoxine and French digitaline are substantially identical, and that German digitaline is a product quite different from either.—*Therapeutic Gazette.*

AMERICAN SURGICAL ASSOCIATION.

Annual Meeting, held in Washington, D. C., May 11, 12, 13, *and* 14, 1887.

(Concluded from page 620.)

Friday, May 13th—Third Day—Morning Session.

OFFICERS FOR ENSUING YEAR.

President—Dr. D. Hayes Agnew, of Philadelphia.

Vice-Presidents—Dr. N. Senn, of Milwaukee; and Dr. F. S. Dennis, of New York.

Secretary—Dr. Jacob R. Weist, of Richmond, Ind.

Treasurer—Dr. Phineas S. Conner, of Cincinnati, O.

Recorder—Dr. J. Ewing Mears, of Philadelphia, Pa.

Council—Drs. J. S. Billings, L. McLane Tiffany, Moses Gunn, and R. A. Kinloch.

Chairman of Committee of Arrangements—Dr. John S. Billings, of Washington.

The following were elected to membership: Drs. Charles B. Porter and Morris H. Richardson, of Boston, Mass.; and Dr. William M. Masten, of Mobile, Ala.

The next meeting was to be held at the call of the President.

Dr. L. McLane Tiffany, of Baltimore, read a paper on

SURGICAL DISEASES OF THE WHITE AND COLORED RACES COMPARED.

The paper was based on the record of 4,930 cases, studied during a period of thirty-four months in a general hospital. The percentages of the affections were given in detail. The paper was simply intended as a preliminary communication, and, as a result of a study of the figures obtained, the following suggestions were made:

1. Surgical affections follow different courses in the white and colored races, under identical hygienic surroundings.

2. Surgical injuries and operations are better borne by negroes than by whites.

3. Surgical diseases involving the lymphatic system, especially tubercular, are more fatal and more rapidly fatal in negroes than whites.

4. Congenital deformities are rarer in negroes than in whites.

5. The surgical differences observed in whites and negroes are due to racial peculiarities.

DISCUSSION.

Dr. W. T. Briggs, of Nashville, Tenn., considered negroes very prone to suppuration. Negroes bear operations better than whites, but they do not get well so rapidly. While malformations are less frequent, still they do occur. The rarity of hydrocele in the hospital records may be explained by the fact that negroes do not usually seek advice until the tumor has become so large as to give rise to much inconvenience. Fibroids and fibrocystoma are very common in the negro. Ovarian tumor is rare, although he had seen one case in which the tumor weighed one hundred pounds.

Dr. D. W. Yandell, of Louisville, Ky., agreed with Dr. Briggs in his remarks. He had seen many cases of keloid in the negro, but had not seen a case in the white subject. He had seen but two cases of hydrocele in the negro, and never saw hare-lip in the negro. He had seen but two ovarian tumors in the negro. Epilepsy is exceedingly rare in the negro. I never saw a case of internal hemorrhoids in the negro. Tetanus is exceedingly common, especially in the black race. Stricture of the urethra is exceedingly common among negroes.

Dr. R. A. Kinloch, of Charleston, S. C., thought that in considering this subject a mistake was made in classing all negroes together. He thought that in the pure negro suppuration is less likely to occur than in the white race. As a rule, the pure negro is not strumous. Mulattoes are, as a rule, strumous. The pure negro bears operation well and recovers promptly.

Dr. B. A. Watson, of Jersey City, N. J., read a paper entitled

AN EXPERIMENTAL STUDY OF THE EFFECTS OF PUNCTURE OF THE HEART IN CASES OF CHLOROFORM NARCOSIS.

The investigation of this subject was suggested to him by the following occurrence: On February 20, 1887, he had killed with chloroform a dog. The abdominal and thoracic cavities were opened about four minutes after the heart had ceased to beat. The assistant seized the heart with his thumb and forefinger, and the pulsations at once began, the contractions became full and regular, and continued three minutes. They were again stimulated by a second touch, action continuing two minutes. They were started a third time and continued to beat one-half minute. This observation suggested the possibility of arousing the heart into action even after entire cessation of its movements, by the introduction of a needle into the organ.

The results of sixty experiments on dogs were given in detail. The experiment consisted briefly in producing death by chloroform inhalation, and then within from one to three or four minutes an aspirating needle was introduced into the heart through the chest-wall, the attempt being to reach the right ventricle. In the first fifty cases the chloroform was administered rapidly, and air was excluded as far as was possible. In the last ten the chloroform was administered slowly and with a large proportion of air. The first forty animals had already suffered some severe traumatic injury, while the last twenty were perfectly healthy animals. The punctures made in these sixty experiments were as follows: Right ventricle, 38; left ventricle, 6; right auricle, 6; superior vena cava, 3; inferior vena cava, 2; apex of the heart, 2; and not stated, 1. The resuscitations were as follows: After puncture of the right ventricle, 9; right auricle 1. The first forty experiments gave only four recoveries, while the last twenty gave six. In only one of the sixty cases did the heart fail to respond to puncture, and in this instance the use of the needle was postponed for four minutes after the cessation of the heart's action, and one minute after breathing had stopped.

In chloroform narcosis the heart is found in diastole, and the veins in the lungs are greatly distended with blood. It may therefore, theoretically, be assumed that blood may be advantageously drawn from the right side of the heart. The author was assured that this procedure was practical and advantageous.

The only deaths during these experiments which could be attributed directly to the puncture were those in which the needle penetrated the vena cava. In these cases there was profuse hemorrhage into the thoracic cavity. Punctures made into the auricle are sometimes followed by a flow of blood into the pericardium. Punctures into the ventricle are not attended with any hemorrhage from the interior of the organ, but there may be a few drops of blood from a wounded cardiac vein.

The following conclusions were reached:

First, puncture of the heart, especially of the right ventricle, stimulates muscular contractions, and may be advantageously applied in the treatment of chloroform narcosis.

Secondly, the best results are obtained when abstraction of blood from the cavity of the ventricle is combined with the stimulating effects produced by the entrance of the aspirator-needle.

Thirdly, the puncture of the right ventricle is a safer and more efficient operative procedure than the puncture of the left ventricle.

DISCUSSION.

Dr. N. Dandridge, of Cincinnati, said that we should be careful how we apply the deductions from these experiments to the human being. The conditions under which the experiments were made were different from those under which accidents usually occur in human beings. In the latter case the accident usually occurs after only a small quantity has been taken, and often early in its administration. In the experiments reported puncture was resorted to within one or two minutes after the cessation of the heart's action. In the accidents with chloroform it is not uncommon to have recovery after apparent cessation of the heart's action for a comparatively longer period. A large number of experiments are required to test the relative value of this procedure as compared with artificial respiration, the use of nitrite of amyl, and particularly with the subcutaneous injection of atropia. This latter can always be done quickly, and has a stimulating effect upon the cardiac and respiratory centres.

Dr. L. McLane Tiffany, of Baltimore, remarked that there are two points in which these experiments are open to criticism. It is well known that on dogs chloroform acts in a very uncertain manner. It is not safe to make deductions from the dog to the human being under these circumstances. In the second place, it is not well to make experiments in the laboratory and then advise others to try them on the human subject. The experimenter should test the experiments on the human subject before he recommends the procedure to others.

Dr. R. A. Kinloch, of Charleston, reported a case of chloroform narcosis in which heart-puncture was tried, but without the slightest benefit.

Dr. T. J. Dunott, of Harrisburg, described a case in which the heart was twice punctured with an aspirator-needle and blood drawn from the cavity of the heart. It was a case of dilatation of the heart, with general dropsy, etc. The operation was performed by a homœopathic practitioner under the idea that he was dealing with a case of dropsy of the pericardium. A large quantity of blood was removed, and for a time there was improvement. The symptoms again returned and the operation was repeated, with a fatal result.

Dr. B. A. Watson, of Jersey City, said, with reference to the action of chloroform on the dog, he was well aware of the uncertainty of its action; but this is all against the dog. Where he had attempted to continue the anæsthetic action of chloroform on dogs for two hours, he lost one-half of the animals.

The committee to which was referred the suggestions contained in the President's address reported that in view of the satisfactory manner in which the work of the present meeting had been prepared, it saw no reason for a change, and did not recommend the appointment of a business committee. It recommended the adoption of the second suggestion with reference to the length of the papers. With reference to the abrogation of Article 9 of the Constitution, the committee was in accord with the President, but as this article had been introduced at the express desire of the first President of the Association, it was recommended that it be allowed to remain. The committee recommended the adoption of the suggestion that applications for membership lie over for one year.

Adjourned.

AFTERNOON SESSION.

Dr. T. J. Dunott, of Harrisburg, read a paper on

HYPERTROPHY OF THE TONGUE, OTHERWISE KNOWN AS LINGUA VITULI, LINGUA PROPENDULÆ, AND MACROGLOSSA.

This affection of the tongue, although rare, is mentioned by nearly all surgeons of large experience. The case described by the speaker was that of a girl, twelve years of age, admitted to the Harrisburg Hospital, January 6, 1886. The tongue protruded from the mouth a distance of three and five-eighths inches. The lips were greatly distended and the angles of the mouth not far removed from the external opening of the auditory canal.

The greatest width of the tongue was four and three-quarters inches, and the greatest circumference nine and three-quarters inches. The prolapse of the tongue was only of two months' duration, and had begun without apparent cause. The measurements taken one week after admission showed a decided increase in the size of the tongue. The tongue was removed, February 19th. After providing against hemorrhage the organ was removed with scalpel and scissors, the section being so made as to secure a conical stump. All the dense fibro-mass was taken away, the weight of the removed portion being over ten ounces. By January 31st the stump was entirely healed. There was no difficulty in keeping the mouth closed. When heard from, March 23d, she could eat and drink without difficulty and was gaining flesh rapidly. The paper was concluded with an account of the various operations which had been practised for the removal of the tongue.

Dr. L. McLane Tiffany, of Baltimore, reported the case of a negro girl, five years of age, who had suffered with hypertrophy of the tongue dating from birth. The tongue was removed with the Paquelin cautery. Within a week the patient was eating meat, and left the hospital ten days after operation. At this time there was a healthy, granulating surface.

Dr. J. Ford Thompson, of Washington, presented the history of

TWO CASES OF VAGINAL HYSTERECTOMY.

Case I.—Mrs. A. E——, forty-five years of age, white, was seen in April, 1885, suffering with malignant disease of the uterus. There was great destruction of the cervix, the ulceration extending above the internal os. On consultation it was decided to avoid hysterectomy if possible, but to limit the operation to amputation of the cervix, with scraping, etc. During the operation the peritoneal cavity was opened. It was then decided to extirpate the uterus. The womb was separated from the bladder in front. A ligature was then placed around each broad ligament and tied. The uterus was then split in two. Each half was then brought down, the broad ligaments tied above the temporary ligatures, and the uterus removed. After thorough cleansing the vagina was lightly packed with iodoform gauze. At the end of the operation the patient was very weak, and notwithstanding all efforts died in the course of twenty-four hours.

Case II.—Mrs. H——, white, fifty-five years of age, came under observation, with cancer of the cervix, in January, 1887. The posterior lip of the cervix was almost entirely destroyed and the disease had encroached upon the posterior cul-de-sac. The cervical canal was involved at least as high as the internal os. The operation was performed, February 28, 1887, antiseptic precautions being adopted throughout. The dissection was begun at the posterior part and carried around the cervix. A silk ligature was passed with a long, curved needle through the lateral vaginal vault of either side and tied. The enclosed portion was then cut from the uterus. These ligatures presumably enclosed the uterine arteries and the lower part of the broad ligament. The uterus was then separated from the bladder in front and a loop of silk was attached to the peritoneum. The posterior cul-de-sac was treated in the same way. The uterus was then tilted through the opening, and the broad ligaments transfixed and tied. There was no loss of blood. The peritoneal flaps were then brought together with two catgut sutures, and a drainage-tube introduced into each angle of the wound. The vagina was packed with iodoform gauze. The patient recovered without any unpleasant symptoms.

Reference was then made to the history of the operation and the various methods of performing it were described.

DISCUSSION.

Dr. T. R. Varrick, of Jersey City, said that it is a question to be yet determined whether such operations as this are likely to mitigate suffering or prolong life beyond the average duration of the disease if left to take its course without interference. Any operation or method of treatment whose record does not show a prolongation of life beyond the utmost limit of the duration of the disease if left to itself is useless and should be avoided.

Dr. T. F. Prewitt thoroughly agreed with the author that extirpation of the uterus is a justifiable operation, and was almost prepared to go further and say that on the earliest appearance of epithelioma of the cervix the whole organ should be extirpated. He believed that ultimately this will be the course adopted.

Dr. E. H. Gregory, of St. Louis, said that he should no more think of removing the entire uterus for epithelioma of the cervix than he should think of removing the whole lip for limited epithelioma of that part. He thought that the surgery of the lips and the surgery of the jaws is applicable to the uterus.

Dr. T. G. Richardson, of New Orleans, presented the history of a case of

ANEURISM OF THE LEFT SUBCLAVIAN ARTERY FOR THE CURE OF WHICH THREE METHODS OF TREATMENT WERE EMPLOYED—DEATH.

The patient, a healthy, muscular Irish laborer, came under observation, October 19, 1885. Aneurism of the left subclavian artery was diagnosed. The patient had suffered with syphilis and constitutional measures were first tried. Iodide of potassium in fifteen or twenty-grain doses was given three times a day. At the end of a week, no perceptible effect being observed, it was discontinued. Direct pressure was next tried; an elastic band with a compress over the vessel was secured to a belt around the waist. This was continued a month, and although it slightly retarded the growth of the swelling it had had no decided result. The third method, the introduction of surgical pins, was next resorted to. Nineteen of these, measuring an inch and a half in length, were passed through the anterior wall of the tumor at different places. The aneurism was still growing rapidly, and all the pins that could be reached were withdrawn. Some of them had disappeared on account of the swelling which had taken place. An attempt was then made to ligate the axillary artery, but in spite of the utmost care the lower portion of the aneurism was ruptured in the progress of the operation. The wound was at once packed with lint dipped in Monsel's solution. The hemorrhage having been stopped, half a drachm of a five per cent. solution of perchloride of iron was injected into the centre of the tumor. At the end of twenty-four hours, no coagulation having taken place, a second injection of twice the strength was employed. The next morning there was an exhausting hemorrhage, ending fatally in a few hours.

Dr. T. G. Richardson, of New Orleans, related a case of

FEMORAL ANEURISM CURED BY ELEVATION AND FLEXION OF THE LIMB.

The patient, an Italian, aged fifty-five, was admitted to the hospital, December 11, 1886, with a large aneurism of the femoral artery, four inches below the femoral arch. While the case was being studied the limb was flexed at a right angle at the hip and knee and suspended on a Smith's anterior splint. The next day the pulsation was greatly reduced and the patient was quite comfortable. The treatment was continued, and at the end of the third day the tumor was solid. The limb was kept in this position for ten days or two weeks. The patient was discharged cured one week later. The speaker called attention to the fact that there was no direct pressure upon the tumor and that the result was due entirely to flexion and suspension of the limb.

Dr. David Prince, of Jacksonville, Ill., read a paper entitled

WOUNDS—THEIR ASEPTIC AND ANTISEPTIC TREATMENT.

After referring in general terms to the methods in use for the prevention of contamination of wounds, the speaker described an operating-room which he had devised, the object of which was to prevent the entrance of infecting principles. All the air entering this room is filtered through successive layers of cotton. The air is heated by means of gas-burners, and to prevent drying of the wound steam is permitted to enter with the air.

Dr. James McCann, of Pittsburg, read a paper on

SPLENOTOMY.

The paper was the description of a case in which removal of the spleen had been practised, with recovery of the patient.

A paper entitled, "The Study of the Methods of Operation practised and of the Results obtained in the Treatment of Cleft of the Hard and Soft Palates, illustrated by the Record of Fifty Cases," by Dr. J. Ewing Mears, of Philadelphia, was read by title.

A vote of thanks was then extended to the Surgeon-General for the use of the room, to the Cosmos Club for courtesies extended, and to the officers of the Association for the efficient manner in which the proceedings had been conducted.

The Association then adjourned, to meet at the call of the President.

AMERICAN LARYNGOLOGICAL ASSOCIATION.

Ninth Annual Congress, held in New York, May 26, 27, and 28, 1887.

THURSDAY, MAY 26TH—FIRST DAY—MORNING SESSION.

The Association met in the Hall of the Academy of Medicine, and was called to order at ten o'clock by the President, Dr. E. Fletcher Ingals, of Chicago.

The roll was called by the Secretary, Dr. D. Bryson Delavan, of New York.

Dr. Ethelbert Carroll Morgan, of Washington, first Vice-President, and Dr. John Nolan Mackenzie, of Baltimore, second Vice-President, were present and occupied seats upon the platform.

MEMBERS IN ATTENDANCE THE FIRST DAY:

Drs. M. J. Asch, of New York; S. H. Chapman, of New Haven; J. Solis-Cohen, of Philadelphia; T. A. De Blois, of Boston; D. B. Delavan, of New York; F. Donaldson, Jr., of Baltimore; W. C. Glasgow, of St. Louis; J. H. Hartman, of Baltimore; F. H. Hooper, of Boston; E. F. Ingals, of Chicago; F. L. Ives, of Chicago; W. C. Jarvis, of New York; C. H. Knight, of New York; F. I. Knight, of Boston; S. W. Langmaid, of Boston; G. M. Lefferts, of New York; R. P. Lincoln, of New York; A. W. MacCoy, of Philadelphia; J. N. Mackenzie, of Baltimore; E. C. Morgan, of Washington; C. C. Rice, of New York; B. Robinson, of New York; J. O. Roe, of Rochester, N. Y.; C. E. Sajous, of Philadelphia; C. Seiler, of Philadelphia; B. F. Westbrook, of Brooklyn; E. Holden, of Newark, N. J.; U. G. Hitchcock, of New York; T. R. French, of Brooklyn; and W. F. Duncan, of New York.

The President then delivered the

ANNUAL ADDRESS,

in which he invited the profession of this city to attend the meeting of the Association, returned his thanks for the honor conferred upon him in electing him as the presiding officer, and then referred to the sources of congratulation for the Association. There had been no estrangement from the general profession, and the fraternal feeling had grown stronger and stronger. One source of special congratulation was the good judgment, the zeal, and the untiring energy of the Secretary in his general work, and in his special arrangements for the present meeting.

Dr. Ingals was favorably impressed with the completed arrangements for holding triennial meetings in Washington, as a part of the Congress of American Physicians and Surgeons, and believed that the meetings would be most satisfactory and useful. He then discussed the question of increasing the limitation of membership, the time and place of holding the annual meetings, and the manner of publishing their transactions, believing that the present plan was as satisfactory as could be adopted. He then closed his address with the reading of a paper on

INTUBATION OF THE LARYNX,

in which he referred to the history of the operation, the varieties of instruments that had been used, and then gave the histories of a few illustrative cases, in which was made apparent the rules for *after-treatment* if the best results would be obtained:

First, prohibit all fluids, except by enemata; *second*, give some preparation of mercury in comparatively large and frequent doses; and *third*, in case of the development of bronchitis or pneumonia, give respiratory and cardiac stimulants.

Dr. Ingals then gave a summary of 514 cases which he had collected. Of these there were 134 recoveries; and of these patients many were under three years of age, of which many recovered. Of 52 cases treated by Waxham, of Chicago, in which the patients were under three years of age, twenty-five per cent. recovered, which is a remarkably good showing.

A general conclusion from this *résumé* was that most of those who recovered after intubation must have perished but for the new method, and he felt confident that the percentage of recoveries would be much greater when more care was exercised with reference specially to after-treatment.

According to Dr. Ingals' experience, the O'Dwyer gag was too small, and he had employed Goodwillie's gag, with the additional precaution of wearing a broad steel band around the finger. The operator should be prepared to perform tracheotomy if membrane is pushed before the tube, and also if intubation fails to afford relief.

Intubation can be quickly and easily performed, the parents consenting; no tedious after-treatment is required, and the results, so far, are as good as those of tracheotomy in all ages, and better than from tracheotomy in children under three years of age. A special compliment was paid to Dr. O'Dwyer for his untiring perseverance in his work, and to Dr. Waxham, of Chicago.

Dr. Charles E. Sajous, of Philadelphia, then read a paper entitled

A NEW METHOD OF INTUBATION OF THE LARYNX,

in which he described and demonstrated instruments that he had used on the cadaver, designed to overcome the following objections to intubation: (1) Obstruction of the tube by fragments of membrane; (2) crowding down of loose membrane; (3) passage of food through the tube into the trachea; (4) momentary arrest of respiration; (5) liability to cough the tube out; and (6) slipping of the tube into the trachea.

The advantages claimed for his instruments were that they gave almost the same breathing space as does the normal larynx; that by their comparative shortness they reduced greatly the danger of crowding down the membrane; that the light weight and the shape of the head-piece avoids interference with deglutition, and that the valves enable the patient to breathe freely; that it cannot be coughed out; and that it is almost impossible to force it into the trachea.

The papers were discussed by Dr. Hooper, of Boston, who gave the record of ten cases of intubation in the Boston City Hospital, with two recoveries. In all the cases the relief from the dyspnœa was immediate.

The tubes were coughed up and swallowed in three cases. There was no trouble in feeding the patients, and no difficulty in extracting the tube. In all kinds of cases there had been twenty-eight per cent. of recoveries from tracheotomy in the same hospital.

Dr. Delavan, of New York, spoke of the advantage of feeding by means of a small stomach-tube, and thought that by it the difficulty of feeding after intubation might be largely overcome.

Dr. Asch, of New York, thought that the liability of the false membrane to be crowded down was difficult to be relieved, even by tracheotomy, and that the difficulty of removing the tubes by the general practitioner was worthy of special consideration.

The discussion was continued by Dr. Woodbridge, of Brooklyn; and by Dr. J. Solis-Cohen, of Philadelphia, who regarded it as important to have the patient watched after intubation, and that the difficulty of giving the patients fluids should never be lost sight of. As to the new instruments exhibited by Dr. Sajous, while he did not wish to discourage any effort in the way of improvement, he had seen so many appliances which could be easily used upon the dead body, but which were perfectly impracticable upon the living subject, that he had rather withhold any opinion concerning them until he had found that the device had been used successfully in actual practice.

The discussion was continued by Dr. Chapman, of New Haven, and was closed by the authors of the papers.

Dr. J. Solis-Cohen, of Philadelphia, then described

A MODIFIED LARYNGECTOMY,

by which the entire respiratory portion of the larynx could be removed, and the greater portion of the thyroid cartilages left undisturbed to perform their function as shields. It was applicable to unilateral as well as to the bilateral procedure, and in devising the operation he had been greatly assisted by Dr. Martin, of Philadelphia. The advantages claimed for it were: (1) Rapidity with which it could be performed with comparative safety to the patient; (2) small size of the wound; (3) preservation of the attachment of the thyroid and hyoid ligaments and the several muscles; (4) retention of the functional structures for deglutition; and (5) leaving a firm, natural support for the adjustment of artificial substitutes for the larynx.

NEW INSTRUMENTS.

Dr. DeBlois, of Boston, exhibited a bag with a compartment containing a tank and compression-gauge.

Dr. Morgan, of Washington, D. C., exhibited a universal powder-blower, and also a modification of his uvula hæmostatic clamp.

Dr. Allen, of New York, by invitation, exhibited a laryngeal snare that worked on the lever principle.

The President then appointed the following

COMMITTEES:

Committee on Nomination.—Drs. B. Robinson, of New York; W. C. Glasgow, of St. Louis; and S. H. Chapman, of New Haven.

Auditing Committee.—Drs. Morris J. Asch, of New York; B. F. Westbrook, of Brooklyn; and J. O. Roe, of Rochester.

The Association then adjourned to meet at 3 P.M.

Dr. R. P. Lincoln, of New York, gave the Association an elegant luncheon.

AFTERNOON SESSION.

The Association was called to order by the President, and

Dr. John N. Mackenzie, of Baltimore, read a paper entitled

THE PATHOLOGICAL NASAL REFLEX,

in which he gave a concise and interesting review of the history of the subject as far back as to Galen. Centuries ago cases were reported in which the symptoms, alleged causes, and treatment were very similar to many that have been reported in modern times.

Dr. John O. Roe, of Rochester, then read a paper on

HAY FEVER,

in which he gave an analysis of his cases, together with the results of treatment. His conclusions sustained, substantially, the views which he expressed in 1883, after Dr. Daly had made known that the disease was due in many cases to abnormal conditions existing within the nasal cavities. He has treated forty-two cases, and from the results obtained in their treatment he concludes that the nasal passages must be restored to their natural condition by removal of redundant tissue and destruction of sensitive areas. The indiscriminate use of the galvanocautery was condemned, although it was of great value when properly used, and perhaps chromic acid was the best for destroying the sensitive areas. His conclusions were:

First.—That all cases of hay fever have their initial lesion in a diseased condition of the nasal fossa.

Second.—That disease of these tissues is reflected to other tissues.

Third.—That sensitive areas of the nose are not confined to any particular locality.

Fourth.—That the direction in which the irritation is reflected is always in the line of least resistance, in one direction at one time and in another at other times.

Fifth.—That disease of the nose may produce disease in other parts of the respiratory tract, which may become an independent source of irritation.

Sixth.—That hay fever is due to the effect of local irritation brought in contact with the sensitive regions of the air-passages.

Seventh.—That the disease is not, *per se*, a neurotic disease, nor is a neurotic condition necessary to render patients sufficiently sensitive to local irritation of the air-passages, and it is not necessarily associated with the nervous development.

Eighth.—That the neurotic condition is often developed as the result of the local irritation.

Ninth.—That by careful and judicious treatment of the disease of the nasal tissues and that of other portions of the respiratory passages below and secondarily affected, and by combining with such treatment the systemic medication that may be necessary to remove the general derangement, we need not fail to cure hay fever.

Dr. Sajous, of Philadelphia, believed that superficial organic alteration is of only temporary benefit.

Dr. Mackenzie, of Baltimore, regards the disease as a neurosis, and has had better results when treating it on that basis than when treating it by local means. When he resorts to operative interference he adopts the stellate incision of the tissue in preference to its destruction or removal.

The discussion was continued by Drs. Knight, of Boston; Glasgow, of St. Louis; Holden, of Newark; MacCoy, of Philadelphia; Hooper, of Boston; and Solis-Cohen, of Philadelphia, who said that he was glad to see that the pendulum was again veering toward the right, as it would seem from the tenor of the discussion. He believed that the more the affection was regarded as constitutional, and the less it was regarded as local, the nearer we should get to the truth.

Dr. Glasgow had cured cases by making applications to the larynx alone, and he believed that the mucous membrane of the entire respiratory tract should enter into consideration in the study of this subject.

The discussion was closed by Dr. Roe, who said that Dr. Mackenzie was too sweeping in his statement that all reflected nasal disorders are hay fever, and the same was true of asthma as referred to by Dr. Glasgow. He had been unable to find any evidence that the disease is a neurosis, although a neurotic subject may be more sus-

ceptible to the local irritation which may cause hay fever.

Dr. D. Bryson Delavan, of New York, read a paper on

THE TREATMENT OF ATROPHIC RHINITIS BY APPLICATIONS OF THE GALVANIC CURRENT.

The object of the paper was to bespeak for Dr. Shurly's method, presented to the Association at a previous meeting, a more extensive trial than it has heretofore received. The method consists in applying the positive pole of the constant-current battery to the nape of the neck, and the negative pole directly to the nasal mucous membrane. The chief objection is the time required to carry out the treatment. The electrode which Dr. Delavan employs is of the simplest kind, consisting merely of a piece of copper wire bent to suit the passage and properly protected.

Dr. De Blois, of Boston, had adopted the method with good results in some cases.

The discussion was continued, and turned upon the value of Gottstein's plug, and the weight of opinion was about evenly divided, perhaps with the balance against using any plugs whatever in the nostrils.

Dr. S. H. Chapman, of New Haven, read a paper on

MYALGIA OF THE PHARYNX AND LARYNX.

The laryngeal is less frequent than pharyngeal. It is a muscular and not a sensory affection, and the patients do not show any evidence of disturbance of the general condition. Local treatment has been of no service.

Dr. Frederick I. Knight, of Boston, then opened a discussion on the

SENSORY AFFECTIONS OF THE THROAT.

His experience had been chiefly with hyperæsthesia and paræsthesia. It is important to consider the general condition of the patient in treating these conditions.

Dr. Mackenzie, of Baltimore, insisted on constitutional treatment.

Dr. Jarvis, of New York, spoke of psychical and constitutional causes behind the local affections.

Dr. Sajous, of Philadelphia, had relieved one patient only by local treatment.

Dr. Glasgow, of St. Louis, had seen the cases associated with diatheses, and also inflamed follicles.

The Association then adjourned to meet at 11 A.M. on Friday.

(To be continued.)

Army and Navy News.

Official List of Changes in the Stations and Duties of Officers serving in the Medical Department, United States Army, from May 22 to May 28, 1887.

Hubbard, V. B., Major and Surgeon. Granted leave of absence for one month, to take effect on or about June 1, 1887. S. O. 119, A. G. O., May 24, 1887.

Elbrey, F. W., Captain and Assistant Surgeon. Found incapacitated for active service by an Army Retiring Board; sick leave still further extended until further orders, on account of disability. S. O. 116, A. G. O., May 20, 1887.

Burton, H. G., Captain and Assistant Surgeon. Granted two months' leave of absence on surgeon's certificate of disability. S. O. 107, Division of the Atlantic, May 25, 1887.

Official List of Changes in the Medical Corps of the United States Navy for the week ending May 28, 1887.

Deane, C. W., Passed Assistant Surgeon. Detached from the Dale and ordered to Hospital, Mare Island.

Harvey, H. P., Surgeon. Orders to Iroquois revoked and wait orders.

Dickson, S. H., Passed Assistant Surgeon. Detached from Navy Yard, Washington, D. C., and ordered to the Dale.

Waggener, J. R., Surgeon. Detached from the Iroquois and wait orders.

White, S. Stuart, Assistant Surgeon. Ordered to Receiving Ship St. Louis, Navy Yard, League Island.

Field, Dr. James G., of Gordonsville, Va., commissioned Assistant Surgeon in the Navy, May 23, 1887.

Medical Items.

Contagious Diseases—Weekly Statement.—Report of cases and deaths from contagious diseases reported to the Sanitary Bureau, Health Department, for the week ending May 28, 1887:

	Cases.	Deaths.
Typhus fever	1	0
Typhoid fever	11	3
Scarlet fever	72	13
Cerebro-spinal meningitis	6	6
Measles	58	6
Diphtheria	116	48
Small-pox	16	4
Yellow fever	0	0

Prognosis in Heart Disease.—Nature's remedy for valvular insufficiency is hypertrophy. We all remember the case of the late Dr. Edgar, of St. Louis, where extensive valvular lesion had been compensated by enormous hypertrophy, and an active life sustained from childhood, when the conditions were first known, to old age. I have the record of a little boy who, suffering from an open foramen ovale, is stronger now in his tenth year than he has been in any previous year.—*Weekly Medical Review.*

Whooping-cough in a Cat.—Mr. O. Bowen, of Liverpool, writes to the *British Medical Journal*: "For the past few weeks I have had under my care a little boy suffering from a more than usually severe attack of whooping-cough, and his mother informs me that for quite a fortnight their cat has had five or six distinct fits of coughing daily, similar in every respect to the boy's, which end after the expectoration of frothy mucus. The cat between the attacks is tolerably bright and active, though not so lively as she formerly was, and has considerably fallen away in condition."

The Causes of Salpingitis.—Dr. Saenger classifies the various forms of inflammation of the Fallopian tubes as follows: I. Forms of salpingitis produced by known specific microbes: (1) Salpingitis gonorrhœica; (2) salpingitis tuberculosa; (3) salpingitis actinomycotica. II. Forms of salpingitis due to specific microbes, identical with those producing traumatic infection: (4) Salpingitis septica. III. Forms of salpingitis produced by specific, but as yet unknown, microbes: (5) Salpingitis syphilitica. Mr. Tait described five causes for salpingitis: (1) Simple catarrh; (2) exanthemata during puberty; (3) gonorrhœal infection; (4) post-puerperal pelvic inflammation; (5) arrested development of the uterus.

Abdominal Wounds.—M. Pozzi communicated to the Chirurgical Society of Paris, at their meeting on December 15th, a case of wounds to the abdominal wall produced by revolver bullets. The patient when seen was vomiting, and passing blood in the urine. Laparotomy was performed; the jejunum and bladder were found to be wounded. The wounded parts were stitched, twenty-nine sutures in all being inserted. The operation lasted two hours and a quarter. The patient died sixty hours after the accident, and fifty-two hours after the operation.—*Medical Press.*

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Original Articles.

BOXING THE EARS.

By SAMUEL SEXTON, M.D.,

NEW YORK.

NEARLY all blows upon the side of the head may injure the ear, and thus range themselves under this category. The custom of ear-boxing is of long standing; thus, according to ancient writers, the classical boxer regarded the ear as the most vulnerable part for the infliction of a blow with the deadly cestus. But, later on, early Christianity aimed a blow against this pagan custom, and with unflinching fortitude the non-combatant, when smitten upon one cheek, meekly presented the other to the still persistent advocate of corporal punishment. And it is due to this kindly example that custom no longer sanctions the practice, though the principle upon which it was founded may have been almost forgotten.

But a great amount of heedless and brutal punishment is still inflicted in this way, not only by pugilists and contestants generally, but also by teachers, parents, and others who find that a punch about the ears is generally a painful and most effectual means of chastisement.

Though corporal punishment, in general, is less in vogue than formerly, the writer has found 51 cases among his records, embracing almost every variety both as regards causation and results, where the ear has been injured by blows of the open hand or fist. Viewed from a clinical standpoint, it was found that 31 of these were males, and 20 were females; of the males, 13 were boxed upon the right ear, 13 upon the left, and 3 of them upon both ears. One was kicked by a companion upon the left ear while bathing, and the right ear of 1 was injured by having the head violently squeezed between the hands of another person. Of the females, 14 were struck upon the left ear, and 6 upon the right. Five of the women were assaulted by pugilistic spouses, which may account for the disproportionate injury to the left ear, since this side is most obnoxious to a right-handed blow.

Though evasive and incorrect answers were often given, inquiries elicited the fact, that of the entire number 8 were boxed in play, 4 by rigorous pedagogues, 2 by parental disciplinarians (the number of these, of course, was actually much greater), and 1, a fervent lover, received a chilling, backhanded slap upon the ear from his indignant sweetheart, effectually cooling his ardor as well as upsetting his equilibrium. The facts in this last case, like many others, only came out long after a misleading statement had been first made.

Several cases occurred among pugilists, the left ear being usually struck in cross-counter. Others were due to assaults, brawls, and contests generally.

The writer, in reflecting on this subject, has been puzzled not a little at the comparatively small number of persons coming to our public clinics with aural trouble produced in the manner under consideration. But when it is considered that but few have any idea of the meaning of the disagreeable symptoms caused by concussion of the ear and its consequences, one need no longer wonder that the injured organ receives no attention. Indeed, it can be readily understood that persons rude and thoughtless enough to box the ears of children will neglect them afterward. Thus but six children came expressly for treatment for recent ear-boxing, though a large number coming for other affections of the ear could recall having had it slapped or pulled previously, and having had subsequently severe pain, distressing noises, and vertigo—symptoms enough, truly, to subdue unruly children, or even a prize-fighter, for that matter.

One cannot lay too much stress on the social aspect of this subject, since the medical adviser may be entirely misled in respect to the causation. Deafness itself is not usually a noticeable feature in children, especially so long as one ear is fairly useful; nor is the yet more distressing symptom of autophonia in its various forms. It is only when pain is unendurable, a discharge offensive to others, or instruction difficult, that the conscience-stricken or reticent parent acknowledges the facts on which a correct diagnosis may be made. A striking case in point occurs to the writer. It was that of a youth, eighteen years of age, who was brought to the New York Eye and Ear Infirmary by his mother, on account of an acute purulent inflammation of the middle-ear with suspicious symptoms of intercranial trouble. He gave the history of a running from the affected (right) ear ever since it had been boxed when he was six years of age. The present exacerbation was due to the rapid growth and consequent pressure of a large polypus. He was advised to have the tumor removed and place himself under treatment, but being very nervous and timid, he lacked courage to consent to the operation. Getting temporarily better, he failed to return.

About a year after this, much more serious vertigo, with other brain symptoms, occurred suddenly, and after a brief illness he died in great agony. The autopsy revealed caries of the petrous bone and pachymeningitis. The father of the boy communicated the final result to me, and with much feeling stated that it was he himself who had struck the blow upon the ear which had thus finally resulted in the son's death. Another case was that of a young man, aged twenty-two, whose father had given him a blow upon the left ear six years previously. Severe inflammation of the middle-ear followed, lasting for two years, during which time the air whistled through a perforation in the drumhead whenever he blew his nose. When seen, the drumhead was found thickened, irregular, and otherwise changed almost beyond recognition. Hearing was very much impaired, and for this relief was sought. In yet another instance of this kind the patient, a young man aged twenty, was slapped upon the left ear by his father. There was immediate pain and deafness, followed in a few hours by a watery discharge, which afterward was tinged with blood. When seen at the Infirmary, two days after the boxing, a perforation in the lower segment of the drumhead was giving vent to a free discharge, and the middle-ear inflammation was complicated with a periostitis externa, the mastoid cortex being swollen, red, and tender to the touch. Autophonia, noises in the head, and pain occurred at the beginning, and were very distressing for a long time, recovery not taking place for three months.

The grave consequences of pounding the ear were well shown in a case of a woman, addicted to drink, aged thirty-eight, who was struck violently by a man upon the right ear in an altercation. The immediate result was severe dizziness, and she had to hold on to a stair-railing to keep from falling. Vertiginous symptoms became more severe, and the pain and autophonia with this alarmed her very much. She was taken to a dispensary, where an energetic attendant, feeling that something must

be done, vigorously inflated the ear by Politzer's method, causing extreme pain in the ear, and afterward introduced some irritant medicament on cotton wool with instructions to keep it in the ear. After this the pain became more severe and she came to the Eye and Ear Infirmary, where the drumhead was examined. This was found to be ruptured. An enormous quantity of serous fluid was escaping from the ear, which was believed to consist largely of the water of the labyrinth, thus indicating that the round window had also been ruptured by the blow. She had now become extremely nervous and experienced insane hallucinations, as was confirmed by Dr. Meredith Clymer, who saw the case. She was admitted to the wards of the Infirmary, and purulent inflammation of the middle-ear soon set in. The cerebral symptoms—pain, vertigo, hallucinations, etc.—became more grave. They seemed due in part to the concussion of the blow; Dr. Clymer thought almost exclusively; but on reviewing the case I am convinced that there was also transmission of a septic irritant through the cerebro-spinal fluid into the cranial cavity, inducing leptomeningitis. The patient left the Infirmary, where her presence proved a great inconvenience to others, before she was well, and when last heard from, a month after the injury, had not recovered.

One not uncommon result of a blow or fall on the ear, might as well be mentioned here. A ceruminal plug is sometimes impacted with considerable force against the drumhead in this manner. The contusion causes pain; if the plug lies long in contact with the drumhead inflammation may ensue.

Rupture of the drumhead occurs not so much in consequence of the *force* with which blows are delivered upon the side of the head as from the violence of aërial compression in the external auditory canal. Blows thus causing sudden concussion may come from above or below the ear, or from the front or rear. Occasionally they fall perpendicularly to the external auditory meatus. In the majority of instances, however, compression takes place through the rapid collapse of the outstanding cartilaginous framework down upon the orifice of the canal. Where the canal is large, condensation is much more effective than where it is very narrow. Pugilists and contestants experience repeated ruptures of the drumhead, and examination of the parts will often show very marked deformities. In two cases observed, the patients exhibited rupture of the drumhead in either ear from blows simultaneously inflicted.

Traumatic injury of the mastoid is said to sometimes rupture the drumhead, but in cases of this kind seen by the writer, while having mastoid contusions, they were, on careful inspection, found to also exhibit evidence of blows upon the auricle at the same time. A very gentle slap, it must be remembered, may, under favorable circumstances, rupture the drumhead, especially in elderly people, in whom it is more friable. Obscure head symptoms, which are often experienced after falls or blows upon the side of the head, so slight that injury of the hearing organ has not been suspected, should therefore suggest an examination of this organ. Boxing the ear, moreover, is known to strain or contuse the drumhead without actual rupture.

Symptoms.—Violent concussion of the drum of the ear gives rise to more or less disturbance of its tension. Numbness about the ear and certain acoustic phenomena, as autophonia and tinnitus, are experienced. The patient at first is usually also confused or stunned. The degree of consequent vertiginous phenomena corresponds to the concussive force and the damage done, but of the fifty-one cases herein cited, only one was actually felled by the blow, and none were made unconscious.

Nervous shock or cerebral concussion is not so great as would be expected when it is considered with what force the indriven drumhead acts upon the ossicles. The stapes, however, owing to the peculiar construction of the transmitting mechanism, cannot be driven with undue force into the oval window in which its base is fixed, though the concussive force from without entirely destroys the drumhead. In extremely violent concussions, however, the drumhead does not always offer sufficient resistance to the force of impact to protect the round window from rupture; its excursions under such conditions may at least give rise to labyrinthine concussion. Such cases are, however, extremely rare as a result of a blow of the hand or fist. Ordinarily the disturbance of equilibrium is slight and of brief duration. Occasionally it lasts for days or weeks, and more or less dizziness may be experienced for an indefinite period.

Pain is usually an immediate symptom, though not invariably so; it may commence only as reactive inflammation comes on, that is so say, in a few hours, or as a result of meddlesome treatment. In intensity it varies from slight discomfort to great suffering. Its duration depends on the extent of contusion, subsequent inflammation, and the nervous temperament of the patient.

Deafness in cases of slight injury may be scarcely perceptible. It is rarely very great at the beginning, and, other symptoms causing more distress, it is liable to be overlooked. It is, for the most part, due to consecutive inflammation of the drum, and therefore need not be considered here. A mere slit in the membrana vibrans scarcely impedes its oscillations in a perceptible degree; nor does contusion of the membrana flaccida. Slight inflammation of the mucous lining of the drum, however, causes greater or less deafness.

Various phenomena, both objective and subjective, attend trauma of the drum of the ear. The sudden and violent tension of the transmitting mechanism gives rise to a sound like the twang of a musical chord, or the sound of a vibrating bell or tuning-fork. Rupture of the drumhead announces itself to the patient with an explosive sound like the rupture of a small bladder or the discharge of a gun. Sometimes the ringing and explosive sounds are both of them heard. Subjective noises supervene, common to middle-ear affections.

Autophonia is a very constant symptom. The resonance of the drum, upon which it partly depends, varies with the degree of swelling and the amount of fluid present. When the ear-drum or other localities in the head reached by the air-passages thus becomes resonant to the voice or other sounds the confusion, and even alarm, of some patients is very great. Patients have come to the writer with the statement that their heads were hollow, and felt empty when tapped with the finger.

Numbness.—The sensitive nerves of the temporal region are often found in a hyperæsthetic state, the parts giving rise to "tingling" sensations when touched.

The progress of these cases, of course, varies. In the 51 cases under discussion it was as follows: 7 were unattended with any discharge throughout; 6 had a serous discharge only, and in none of the above were any inflammatory symptoms observed. In 6 cases there was decided inflammation of the drum and swelling of the drumhead, but no discharge. In 25 cases suppurative inflammation of the drum occurred with greater or less severity. In 6 cases the particulars in this regard were not noted.

Perforation whistle may afford the only intimation of rupture of the drumhead, where a slight blow upon the ear has been given. The escape of air on inflation of the drum, however, is not always of a whistling character, since the quality of the sound depends on the size and shape of the vent in the drumhead and the patulency of the Eustachian tube. Any considerable inflammation of the drum, whereby its lining membrane becomes thickened, thus diminishing its cavity and obstructing the air from the Eustachian tube, or an accumulation of secretions, would affect the character of this sound. The difficult escape of air, or its passage along with fluids, gives rise to peculiar noises, very different from the whistling to be heard several yards away when the drum cavity is dry and the opening happens to be of the proper size.

Appearances.—The drumhead is at first congested, the injection being deepest in the membrana flaccida, and usually extending down along the malleus handle where the network composing the malleus plexus of vessels becomes prominent. But this clears up again in a few hours, unless inflammation ensues, and slight vascularity only remains in the edges of any wounds produced by the injury.

Multiple ruptures occur, but generally they are single and situated in the lower segment—most frequently in the posterior portion of this. They vary in size and shape; often they are triangular, a flap being left attached at one of the sides of the defect. Some are straight, some semilunar or variously curved.

The *course* varies. Large and irregular rents are not always attended by displacement, but when the edges do not approximate any loose flap generally sloughs away and leaves an irregular perforation. The edges of perforations, though irregular at first, afterward become more and more smooth as suppuration continues, and the opening may remain permanently. Where there is displacement only, or where the parts are not kept at rest, healing is delayed; but in the more favorable cases it takes place rapidly by primary union. Meddlesome treatment, of course, protracts the case, and if middle-ear inflammation occurs from this or other cause, affairs become complicated. In the greater number of instances spontaneous and complete union may be expected. Suppuration protracts these cases very much, the reproductive process being slow, and opacities, comprising areas of cicatricial tissue of various sizes, remain. If a large area of the drumhead has been lost a manometric cicatrix often develops itself.

The *prognosis* is favorable in most instances; even where there has been suppuration, the drumhead finally heals. The hearing-power is nearly always restored where a mere rupture occurs. Where there has been suppuration of the drum or other complications, hearing will be more or less impaired. Some of the writer's cases were cured in a few days without remaining injury, while others did not recover for as many months. Several protracted cases were seen where, from neglect or maltreatment, the ear had been discharging for a period of ten years or more. In one case this condition had existed for thirty-seven years. In these protracted cases a great loss of hearing-power existed.

The *diagnosis* is not difficult if the ear is examined early enough, or before inflammation has set in. It is well to bear in mind that the slight traction made upon the cartilage of the external ear, necessary on introducing the speculum, may produce congestion of the drumhead, which is thus made more tense. This congestion is indistinguishable from that caused by boxing or pulling the organ. A perfectly normal drumhead may thus be made to appear to have been injured.

Blood or serum, sometimes both, not infrequently trickle from the ear immediately after the drumhead is ruptured, and when the parts are examined soon afterward, traces of this may be seen. Later on inspissated clots only are usually visible. Sometimes they are limited to the line of fissure and aid in retaining its edges in contact. Where the contusion has been great an area of membrane assumes the appearance of a blood-clot, and may slough or remain while reproduction goes on underneath. In some cases the drumhead swells rapidly, all traces of blood-stained fissures and other landmarks being obliterated. In other cases healing is so rapid that nearly all traces disappear in a few days, so that even an expert can discover them with difficulty. When injuries are not seen until swelling has masked the outlines, they will often be found quite distinguishable again after its subsidence.

Ruptures from boxing occur for the most part in the membrana vibrans, while contusions and lacerations from pulling the auricle occur in the membrana flaccida. If not observed for ten days or a fortnight after the injury the slit-like or ragged-edged wound usually assumes a regular ovoidal shape in cases where suppuration takes place.

A differential diagnosis becomes more difficult when inflammation of the drum, from causes other than traumatic, exists before the injury, or arises subsequently.

The escape of air on inflation of the drum is an infallible sign of perforation of the drumhead; it may be detected with the diagnostic tube when the perforation whistle is not well marked.

I have never seen adhesion of the drumhead to the inner wall of the tympanum take place as the result of injury from boxing the ear, though this may occur as a consequence of severe inflammatory action.

Fracture of the malleus handle.—The appearance of the drumhead a few days after traumatic rupture is sometimes suggestive of such an injury, and the first examination is thus often deceptive. In a case of rupture bisecting the drumhead transversely, examined for the first time nine days after the injury, the malleus handle seemed to be fractured at about its middle; but as the swelling subsided it began to appear that no such injury existed.

In comparatively slight swelling the landmarks become indistinct, or even obliterated altogether; but as healing takes place these are again restored. My suspicions in respect to this injury were not in any instance verified.

Treatment.—It is a safe rule to abstain from doing anything. In most of the protracted cases I have seen, there was given a history of meddlesome treatment from the beginning. When intra-tympanal air renewal is active, as shown by oscillatory movements of the drumhead, the patient should be cautioned against inflating the drum voluntarily, but instructed to maintain rest. When its presence is borne, a quantity of boracic acid with calendula may be introduced by means of insufflation. This, when no discharge, or scarcely any, exists, quickly forms itself upon the membrane, preventing undue motion. The presence of inspissated sero-sanguinolent effusion upon the outer surface of the drumhead affords protection and should not be removed by syringing. In the more protracted cases where the powder is not borne, the instillation of succus calendulæ proves gently stimulating to the granulating edges of the wound, and, on drying, forms a thin, protecting film of calendulin over the wound. The most simple case may be aggravated by active management, such as inflation, syringing, the instillation of irritants, and the like. Inflammation of the middle-ear thus set up cannot, however, be considered in this connection.

The medico-legal aspect of boxing the ear.—Claudius, in pouring a "leperous distilment" (juice of hebenon) from a vial "into the porches of his brother's ear," with murderous intent, could not have done the harm that often follows a thoughtless box upon the ear. Thus it has been shown that the functions of this delicate organ may be greatly impaired by a comparatively slight assault.

Redress for assaults of this kind is sometimes sought in the courts of law. In two cases of recent date coming to the writer's knowledge, the plaintiff was successful in both instances. In one of them, Professor Hjalman Hjorth Boyesen, of Columbia College, was sued in the City Court for $5,000 damages.

The suit was brought by a boy through his father, Alfred E. J. Tovey, editor of the *Brewer's Journal*, his guardian *ad litem*, before Judge Hawes and a jury. It was stated that defendant struck the boy, who was then seven years of age, on the head. From the testimony, as reported in the *Times* newspaper of May 6, 1885, it would seem that the boy received a slap with the hand which did not knock him down. The father testified that his son was not deaf prior to the assault, and that he had since been under medical care. It was suggested by the defence, which contended that only a gentle slap had been given, that the trouble might have arisen from

colds, or from having bathed in the sea. A witness testified that the boy went into the water too often, and that he was slightly deaf before the assault.

The jury decided that the defendant must pay $400 damages.

In another case, Marwig *vs.* Davies, large damages were claimed; the case was settled by the defendant consenting to the entry of a judgment. Mr. Newcombe, the plaintiff's counsel in this case, states that the "defendant struck the child—he fell on a rock—producing temporary deafness. Our action was for the assault."

As medical jurists, we must bear in mind that the extent of aural injury, where the patient has been assaulted by a blow upon the side of the head, is not to be measured by the *force* of impact, but rather by the *nature* of the blow. Thus, in one instance the force of a violent assault may expend itself without injury of the hearing-organ, while in another a very slight tap upon the temporal region, by suddenly compressing the air in the external auditory canal, may contuse and rupture the drumhead. It has been said already that a simple rupture should be let alone, since in healthy persons it soon heals. It is the purulent inflammation that ensues in catarrhal subjects, or from mal-treatment, that causes most of the trouble in these cases. In persons with general catarrh of the upper air-tract, traumatic injuries of the ear seem disposed to suppurate. Head catarrh, coming on subsequently to trauma, like injudicious treatment, will generally protract these cases very much.

Where a traumatic wound of the drumhead has in this manner become chronic, so to speak, a diagnosis is difficult. Hence, in order to determine the exact degree of injury from traumatism, an expert examination must be made early. Thus, where an examination has been postponed, the rupture no longer presents a slit-like appearance, but has assumed a more or less ovoidal shape, and cannot now be distinguished from perforations due to chronic purulent inflammation from causes other than traumatic.

It appears to the writer that the assailant is not the only person to be held accountable for the results of injudicious treatment or neglect; for, although the legal rule, in New York at least, as to liability in actions for damages for injuries to the person arising from tortious acts seems to be, that although the original tort-feasor is ordinarily liable only for such consequences as naturally flow from his wrongful act or negligence, and not for those injuries due to an intervening and intelligent cause, still, if a plaintiff, suffering physical harm from the wrongful act or omission of the defendant, calls in good faith such medical attendance as it is reasonable to presume would be competent to effect his cure or restoration to health, and the physician or surgeon, so called, by erroneous treatment causes positive harm, the plaintiff shall nevertheless recover in the action. At the same time, a jury being the arbiter of the measure of damages, it may be less likely that a large verdict would be recovered against the original tort-feasor in many cases than against the physician, if the latter's malpractice could be established; and the plaintiff, having an action against the medical attendant, who is bound to exercise at least the skill and knowledge possessed by the average practitioner of his neighborhood, may often find him a more desirable defendant, especially if pecuniarily responsible, than the original wrong-doer, although the latter may be also responsible at law.

It is important to ascertain if there has been deafness or a discharge from the ear before or at the time of the alleged injury, and if so, whether any increase of the trouble was caused thereby. This is a point concerning which reliable evidence must, in many cases, be entirely wanting or difficult to obtain, since both may exist without the patient's knowledge. Nor is the testimony of others in this regard always competent, for both teachers and parents, where children are concerned, may have no suspicion of deafness where it actually exists, so long as one ear remains sound, or even fairly so. Where the ears have been pulled and boxed repeatedly, some impairment of the organ of hearing is nearly always found, and often very pronounced in degree. But where the injury has been but slight and confined to the drumhead, with rapid recovery, hearing is usually completely restored. In ascertaining the loss of hearing-power the voice is the best test, for the inability to converse is a greater detriment than not to be able to take cognizance of other sounds. Malingering may be resorted to by the complainant, but unless cleverly done is not liable to deceive the expert examiner. This, however, is a device seldom practised unless absolute deafness is claimed, a result seldom following boxing of the ears. Where great deafness is claimed to result from trauma, the drumhead should be carefully examined for evidence of resulting deformity, using if necessary a magnifying lens.

The question of permanent injury from shock is likely to come up in some cases. Everyone knows that falls and blows upon the head often give rise to vertiginous phenomena, but serious labyrinthine concussion as a complication of ear-boxing is comparatively rare, since the concussive force from blows with the hand or fist is broken by the drumhead, thus protecting the round window. Acute inflammation of the middle-ear consequent upon trauma, as from other causes, is very often attended with vertigo. In cases where purulent inflammation of the middle-ear has followed trauma, vertigo, autophonia, and various forms of tinnitus, as well as deafness, may remain permanently. It is well to remember that deafness from chronic catarrh of the middle-ear is much more likely to be found on the left side.

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A PLEA FOR EARLIER OPERATIONS IN PERITYPHLITIC ABSCESSES, WITH A CASE OF LAPAROTOMY FOR PERFORATION OF THE APPENDIX VERMIFORMIS.[1]

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A PHYSICIAN in full general practice soon becomes possessed with the clinical knowledge that the inflammations beginning in the right iliac fossa, which he has been taught to consider as perityphlitic, do not always run the same course. At times beginning with pain of great severity, symptoms of general peritonitis rapidly ensue, which, masking the iliac pain, quickly pass on to a fatal termination in from one to five or six days; or, in lieu of this latter, with almost equally marked constitutional disturbance, the general peritoneal tenderness, while considerable, remains overtopped by the original pain in the right side, and on its subsidence, as time passes, a tumefaction in the iliac fossa is revealed, which, with some recurrence of chills, progresses with fair rapidity toward the surface, and soon shows itself unmistakably as an abscess. However, instead of this form, he may be called to treat a case of fairly sharp pain, infrequent vomiting, and some intestinal distention, but no general abdominal pain nor parietal rigidity, and with easily and early recognized right-sided swelling, which, with the usual symptoms, after a number of days shows itself to be an abscess. Or, finally, he may encounter a patient suffering with pain of a variable character, not always to be distinguished from that of the immediately preceding type, and with this a sensitive swelling is quickly felt, with moderate temperature-elevation, which latter promptly subsides under the use of anodynes, and throughout the course of the trouble but little inflammatory peritoneal symptoms are to be appreciated, though obstructive signs may be present. In this latter case resolution is common.

[1] Read at a meeting of the Practitioners' Society, May 6, 1887.

The explanation of this variation of symptoms is not difficult; the researches of Treves[1] had shown us that the cæcum and its appendix are covered entirely by peritoneum, and that they both are also entirely intra-peritoneal viscera. This is contrary to the usual teaching—which is, that the posterior part of the caput coli is destitute of peritoneal covering, and is attached to the fascia covering the right iliacus muscle by areolar tissue.

Treves, from an examination of one hundred bodies, has found that in every instance the cæcum and appendix has been completely enveloped on all sides by peritoneum, and has been free in the abdominal cavity. Furthermore, there is no such thing as a meso-cæcum. The mesenteric attachment, which is not always met with in the appendix, is derived, evidently or primarily, from the terminal portion of the ileum. The point of the appendix, it is known to all, does not in every case hang down in the pelvis, and as it varies in length, it also varies in position, and can attach itself by slight inflammatory attacks to contiguous organs; but in eighteen per cent., as a normal procedure, it is glued posteriorly, more or less tightly, to the cæcum. These anatomical facts, with the pathological one stated by Fitz,[2] that only three cases of acute primary perforation of the cæcum have been found on record, which statement is confirmed in Matherstock's exhaustive article on perityphlitis, lead directly to the conclusion that the so-called perityphlitic abscesses are due, in the vast majority of instances, to inflammation[3] or perforation of the intra-peritoneal appendix vermiformis.[4] Now this latter, which is the more common lesion, can act in three ways: The opening may allow extravasation of fæces or gas, or of the more infectious products due to necrotic processes (Grawitz), into the peritoneal cavity, with the result of a fulminating peritonitis; or, what is the most common of all the conditions from the lesion in question, the adjacent intestines may become speedily adherent to each other and shut off the inflammatory focus from the rest of the peritoneal cavity, and in this way an intra-peritoneal abscess is formed; and, lastly, by virtue of old or recently formed adhesions of the appendix and cæcum (and this seems to be more common on the posterior surface of the latter) to the parietal peritoneum, the contents of the perforated appendix may enter the sub-peritoneal cellular tissue and there develop a swelling and abscess. These intra-peritoneal abscesses are spoken of by With,[5] who has written most ably on this subject as local appendicular peritonitis, and who met with 16 of this character in 35 personally observed cases. Sands,[6] however, says that he has operated for perityphlitis a great many times, but had never yet found a circumscribed abscess bounded simply by coils of adherent intestine. My own experience is in the reverse direction, for I have, out of six cases of perityphlitis seen in the past year, been able in four instance to recognize toward the median side of the abscess, after it had been opened, the irregular loops of small intestines, which thus proved the intra-peritoneal nature of the abscess. On this point, also, Fitz speaks in no uncertain manner, viz.: "The adherence of coils of intestine to each other and to the abdominal walls favors the accumulation of the exudation in a limited space, and thus the formation of the tumor."

[1] Treves, F.: Lectures on the Anatomy of the Intestinal Canal and Peritoneum in Man, Br. Med. Jour., March 1–21, 1885.

[2] Fitz: Perforating Inflammation of the Vermiform Appendix, Am. Jour. of the Med. Sciences, October, 1886.

[3] With, among others, regards the existence of a primary typhlitis as very doubtful—the group of symptoms attributed to this disease belonging to an intra-peritoneal abscess.

[4] Taft states that, in three hundred personal observations, every third person between the ages of twenty and seventy showed traces of inflammatory trouble, past or present, in the appendix, and that actual ulceration existed in five per cent. of all bodies examined by him. In Noyes' collection of 100 cases of perityphlitic abscess treated by operation (Trans. Med. Soc. R. I., December, 1882), I find, by analysis, that there were 40 cases in which concretions or foreign bodies were found, 14 cases where much air was met with, 45 where pus, more or less fetid, was evacuated, and 1 in which it is not noted. This proves very clearly the fact of perforation being very common.

[5] With, on Peritonitis Appendicularis, London Medical Record.

[6] Sands: Medical News, January 15, 1887.

These remarks of his, it must be recollected, are based upon the careful consideration of 257 cases of perforation of the appendix vermiformis. Again, he says that the more protracted the course of the disease the greater is the probability of the destruction of the peritoneum forming the wall of the abscess. With this perforation of the parietal peritoneum, he adds, purulent and fecal infiltration of the abdominal wall may occur. It is rare, he also further remarks, for the primary swelling to be paracæcal, although this variety occurs where the appendix lies behind the cæcum. This point of the location of the abscess will be of comparatively little importance to those who believe in the dogma, "Ubi pus ibi evacua"—"when pus is found, let it out"—but is of great moment when the advice is listened to of delaying an operation for the relief of a perityphlitic abscess until the twelfth to the eighteenth day,[1] as the risk thus incurred is by no means small. For out of 176 cases given by Fitz, thirty-four per cent., or 59, died during the first five days, and out of the 35 cases observed by With, 12 died in periods of from two to six days; and in children this mortality reaches to the high figure of seventy per cent., and forty-four per cent. die within the first three days, according to Matherstock.[2] Hence the need of early interference to avail anything in such cases.

There is another risk which comes from waiting, which I beg to refer to. It is the bursting of the abscess into the peritoneal cavity and the lighting up of a general, and usually fatal, peritonitis. This happened in one of my earliest cases. Ball, in his able thesis, out of 67 collected instances, found that this occurred eight times. A fit of laughter, in one of With's cases, produced a similar disastrous result. It often occurs on the fourth to the fourteenth day, without the tumor being detected, and took place in 6 of With's 12 fatal cases.

The principal objection that has been raised against the early operative interference, which is the natural deduction from the foregoing statements, is that an iliac incision, made to reach a deep abscess, might involve or open the peritoneum, which then might be contaminated by the evacuated pus; in other words, that the operation itself is unsafe, and, secondly, that, owing to the subsidence of a certain number of iliac swellings, resort to the knife might be unnecessary. As to the risks that may be brought about in operations for the relief of either sub- or intra-peritoneal abscesses, such are frequently and happily overcome by the gynecologists in the treatment of peritoneal abscesses of other causes; and in extirpation of the rectum, with the common opening of the peritoneal cavity, the influence of infectious fæces is easily guarded against. Moreover, it should be proved, which is, however, not done, that this supposed danger is greater than the actual ones already enumerated. Furthermore, as to the subsidence of perityphlitic tumors this is granted, and takes place, too, not infrequently where the abscess is undoubtedly present, as is shown in Ball's cases, where it occurred fifteen times by perforating into the cæcum—a result not always to be recognized by subsequent inspection of the fæces. This occurrence does not militate against an early opening of the abscess by the surgeon, but rather works in the opposite direction, as the perforation might occur in other more dangerous regions—*e.g.*, into the bladder, etc. Another explanation for the subsidence of cæcal swelling is afforded by the fact that such (the fourth condition alluded to in my opening remarks) conditions are often due to a cecitis of fecal or possibly infectious cause. They can usually be distinguished by their more gradual development and the prompt subsidence of the acuter symptoms under the use of anodynes. They are not always as readily made out as writers would lead one to suppose. So acute a surgeon as Dr. R. I. Hall,[3] of this city, was misled by a similar case, which was subsequently cleared up by a free

[1] Sands, quoted by Noyes: Trans. R. I. Med. Soc., 1882.

[2] Gerhardt: Handbuch der Kinderkrankheiten, Bd. iv., c. 912.

[3] Medical News, May 22, 1886, p. 582.

but late evacuation of the bowels. It may be here remarked that, in cases of perityphlitic trouble where a doubt exists, it is wiser to refrain from moving the bowels, as this might, in a perforative effusion, precipitate a general peritonitis. Kraussold[1] scouts at the idea of resorption of a perityphlitic abscess, and says that where it takes place, and not by internal rupture, no abscess has existed.

A final quotation on this part of my subject may be made from Pepper,[2] who states that "the unjustifiable delay permitted in many cases of typhlitis, while hoping day after day for the more definite detection of suppuration, is the direct cause of many avoidable deaths."

In consideration, therefore, of the foregoing data, it seems to me justifiable to urge the necessity of opening all inflammatory swellings of the right iliac region as early as possible. The detection of pus may be frequently aided by the use of a good-sized aspirator-needle, carried in several directions and into the lumbar region as well as deep into the iliac fossa. But recollect that even though the aspirator fails to show the presence of pus, it by no means proves that it is not there. If the tenderness is too great for satisfactory palpation, an anæsthetic should be administered and the iliac region carefully but gently examined; to this should be conjoined a rectal exploration. If a tumor be made out, in such circumstances, the use of an exploratory incision, running as if for ligature of the external iliac artery, or, as Burchard[3] suggests, one starting two inches in front of the longissimus dorsi muscle and running forward just above the iliac crest, can be resorted to until the swelling is reached, when either aspiration can again be used or the tumor can be directly incised. If any exploration of the cavity is employed, it should be very carefully conducted, to avoid breaking down protective adhesions. This exploratory incision in doubtful cases should be carried well back, so as to allow the post-cæcal region to be fully examined.

Fitz directs that such operative measures should be conducted as soon as the abscess becomes evident, and that this is usually on the third day after the appearance of the first characteristic symptom of the disease. Kraussold also advises the earliest possible incision, to prevent dangerous complications. By resorting to aspiration, Bull was able to detect and open a perityphlitic abscess on the second day after the first symptoms had developed. In concluding these reflections on the treatment of perforations of the appendix, with abscess-formation, one must not be misled by the statistics of operations successfully done at comparatively late periods of the disease, as, for instance, is given in the 100 cases of operations collected by Noyes, in which there were but fifteen deaths; but even here, in the 12 cases that were incised on the eighth day or earlier, the mortality was but eight and one-half per cent., while in the 88 other cases later operated on the death-rate rose to seventeen per cent. The figures already given have shown how great is the mortality without operation prior to the fifth day even, and it is in the hope that many lives now lost may be saved that the persistent presentation of the question of early surgical interference to the profession is made.

But much heavier responsibility comes upon the surgeon when his judgment is called upon in the cases where an acute general peritonitis is supposed to be progressing from a perforated appendix. In some instances, styled by Mikulicz the per-acute, the peritonitis may destroy life within forty-eight hours—generally it lasts from three to six days, and occasionally longer. It may begin frankly, with sudden and violent abdominal pains, felt early in the right iliac region, but soon masked by the general peritoneal tenderness (in this differing from the intra-peritoneal abscess, which commonly has the most intense pain in the affected iliac region). Nausea soon appears, with vomiting, first of bilious matter, which often becomes fecaloid and occasionlly stercoraceous, thus simulating an obstruction. There is high fever, going to 104° and over; the abdomen at first is hard and rigid, a point that Ebstein[1] lays stress on as indicative in such conditions of a general perforative peritonitis; it subsequently becomes tympanitic. The liver-dulness[2] is but little changed, unless tympanites has set in. There may be painful micturition, or even complete retention. The pulse ranges from 90 to 140 and becomes, though not always early, rapid and small. Constipation is usually present, with the other usual signs of intense peritonitis. Percussion reveals no dulness, and under anæsthesia no tumor can be felt about the cæcum. Late in the progress of the disease flatness or percussion in the flanks will occasionally mark the presence of peritonitic fluid. All these symptoms may likewise develop themselves in the course of a mildly progressing or less severely acute local iliac peritonitis. In the one to be immediately reported, the exacerbation of pain showed itself at the end of the second day. Rarely do such symptoms satisfactorily ameliorate. With had 14 of these cases, of which 2 recovered. Pepper, out of 12 cases, had 6 of this kind, of which all died. Matherstock reports in this connection that in children, in whom this general peritonitis is more common, forty-four per cent. of the cases of perityphlitis die within three days; while Whittaker[3] gives the mortality in adults at the lower figure of thirty per cent.

It is quite natural, therefore, that surgery should be called on for help in such a grave disease as this, in which nearly all authorities speak in the most discouraging terms. It is only lately, however, that an endeavor has been made to reverse the death-record in this lesion. It is true that gynecologists, commencing with Keith[4] in 1865, and embracing the noted names of Wells, Schröder, Tait, and others, have repeatedly performed, with success, laparotomy with fully developed general peritonitis. Tait even has expressed himself axiomatically that the presence of peritonitis, together with some other condition which by itself would involve abdominal section, is the most potent of all reasons for the immediate performance of abdominal section;[5] and in another journal he dogmatically remarks further, in connection with obscure abdominal diseases, and this is quoted with approbation by Albert, of Vienna, that when the doctor is in doubt and the patient in danger, make an exploratory incision and deal with what you find as best you can.[6] Led by the experience that produced such logical conclusions, surgeons have essayed, in the infectious peritonitis produced by perforations of the intestines, to resort to laparotomy, with, so far, much inferior success to that attained by their gynecological brethren. Up to the present time this operation has been performed for perforation of the intestine, not traumatic, fifteen times, in nine of which the perforation took place in the appendix. These latter are epitomized as follows:

Case I.[7]—Mikulicz, 1883; male, aged forty-nine. Laparotomy on fifth day, for general peritonitis, from supposed intestinal obstruction. Perforation not recognized at operation. Death on fifth day. Perforation of appendix found at autopsy.

Case II.[8]—Chaput, 1883; male. Laparotomy, tenth day, for supposed obstruction. General suppurative peritonitis; drainage. Death shortly after termination of operation. Perforation of appendix found at autopsy, which had not been recognized at operation.

[1] Kraussold: Ueber die Krankheiten das processus Vermiformis, Sam. klin. Vorträge, No. 191.
[2] Pepper: Trans. Med. Soc. Penn., 1883.
[3] On Operative Interference in Acute Perforative Typhlitis, N. Y. Med. Jour., January, 1881.

[1] Ebstein zur Lehre von der Perforations peritonitis, Zeitschr. f. klin. Med., 1885, p. 209.
[2] The escape of gas is generally so slight in these perforations that but seldom will the area of liver-dulness be affected, and Epstein has shown that the symptoms cannot be relied on when the bowels are distended with flatus. Janeway has also noted this.
[3] Whittaker: Pepper's System of Medicine, vol. ii.
[4] Smith, Thomas: On some Points in the Surgical Treatment of Intra-peritoneal Injuries, St. Bartholomew Hospital Reports, 1873.
[5] Tait: Ed. Med. Journal, May, 1886.
[6] Tait: Br. Med. Journal, No. 1155, 1883.
[7] Ueber Laparatomie dei Magen und Darmperforation, Samm. klin. Vorträge, No. 262, 1885.
[8] Progrès Médicale, 1883, p. 103.

CASE III.[1]—Krönlein, 1884; male, aged seventeen. Laparotomy, second day, with all usual signs of peritonitis present. Temperature not high, nor was there much tympanites present. Appendix found perforated, and removed for first time in history of surgery. Patient died on the second day after the operation, after a temporary amelioration of symptoms.

CASE IV.[1]—Krönlein, 1885; male, aged seventeen. Laparotomy, eighth day. Early symptoms pointed to right iliac disease. Stercoraceous vomiting and great tympanites came on, and induced operation. The perforation was not found. Belly cleansed and closed without drainage. The patient recovered.

CASE V.[2]—Polaillon, 1884; male, aged nineteen. Laparotomy, seventh day, for supposed obstruction of the bowels, with fully developed peritonitis. Perforation not found, as the source of obstruction was not recognized. A loop of intestine was sewed in abdominal wound and an artificial sinus there made. Death occurred ten hours later—only at the autopsy was the perforation of the appendix recognized.

CASE VI.[3]—Poncet, 1885; male, adult. Laparotomy, fourth day, without anæsthesia, with general peritonitis and fecal vomiting. Perforation not found. Only an ulceration of the mesentery recognized, probably secondary. Drainage. Died same day. At autopsy appendix found gangrenous, but not perforated, but containing several fecal concretions in it.

CASE VII.[4]—Regnier, 1886; male, aged sixteen. Symptoms of intestinal obstruction, with stercoraceous vomiting. Laparotomy, fifth day. Suppurative peritonitis found. Died seven hours after operation. Perforation of cæcum only recognized at the autopsy.

CASE VIII.[5]—H——, 1886; male, aged eleven. Fifth day, laparotomy over most tender spot in right iliac fossa. Healthy intestine exposed; by poking with fingers an abscess containing two ounces was opened, and drained. The patient recovered.

CASE IX.[6]—R. I. Hall, 1886; male, aged seventeen. Laparotomy, fourth day. Present, acute peritonitis, with a right inguinal hernia. The diagnosis of strangulated hernia was made, the sac was opened, and gave exit to fetid pus. At top of sac cæcum was recognized and a perforated tubercular appendix vermiformis, which was tied off and removed. The wound was enlarged upward three inches and the cavity of the peritoneum opened large enough to admit the hand, by which a number of purulent deposits of pus were broken up and emptied, but no washing out resorted to. Large drainage-tube and vent of iodoform-gauze used. Patient recovered.

CASE X.[7]—Bryant; male, aged forty-nine. Laparotomy, end of second day. General peritonitis, with referred epigastric pain. Operation discovered the appendix perforated in three places. Peritoneal toilette and washing with $\frac{1}{10000}$ sol. bichloride. Death twelve hours later.

To these cases, collected in a rather hasty search through medical journals, can be added two cases of my own in which similar operations were done and with, in each instance, a fatal result. One of these cases has already been reported in *The Medical News* for January 15, 1887; in this instance laparotomy was resorted to on the fifth day of the disease, and on the same day that he entered the hospital. An aspirator-needle drew pus from right iliac fossa and an incision was there first made, though no dulness existed, in the hope that a circumscribed collection of matter might be encountered. It proving to be a general suppurative peritonitis, a median laparotomy was done and a perforation of the appendix recognized very easily. This was sewed, after a previous ligature, to its base, and the belly washed out and drained. Death occurred suddenly six hours after the operation, after temporary improvement under stimulants and tincture of strophanthus, and on the autopsy a ruptured aortic valve was found.

My second case was as follows: A hearty young man, nineteen years of age, who had had twice within the past two years colicky pains and some prolonged tenderness in the right iliac fossa, was seized, Monday evening, April 18, 1887, with pain in the same region sufficient to cause him to bend over in walking. This pain during the night increased, and the next day extended more over the whole belly. He had that day an enema administered, without effect. The next day, in the afternoon, a chill came on, with aggravation of symptoms. Pulse ran up to 130 and temperature to 104°, and the tenderness of the abdomen, which had heretofore been greater in the right side, was felt more to the left of the median line. Vomiting occurred only once this day. He was seen by a surgeon in consultation with his regular medical attendant, and a number of leeches were ordered to be applied to the right iliac region, and opium and antipyrine to be administered. I was called to see the patient, April 21st, on the fourth day. His pulse then was 136 and of good, strong character; no vomiting, no anxiety or pinching of the face. He had, however, a tense, hard abdomen, with but little tympanites, no diminution in the liver-dulness, and decidedly marked pain, without any change in percussion-note, to the left side of the median line. No irritability of the bladder. There was only a moderate amount of pain in the right iliac fossa, where, moreover, no flatness in sound could be elicited or tumor detected. Believing that I had to deal with a perforated appendix, with a possibly forming intra-peritoneal abscess, I prepared a laparotomy, after a more satisfactory examination under an anæsthetic, and he was sent, therefore, to the New York Hospital. Two hours later he was there etherized, which allowed, by relaxing the taut abdominal wall, a freer palpation. No tumor could be made out, and a further effort to discover pus was made by thrusting in a fair-sized aspirator-needle in three different directions in the iliac fossa. Nothing resulted from this, and on consultation with my colleagues, Drs. Markoe and Peabody, it was judged that the absence of vomiting and of the characteristic symptoms in the face and pulse warranted a delay of twenty-four hours, in the hope that we had to deal with a localizing inflammation. I felt myself justified in agreeing with them, though the events to be narrated showed the danger of so acting; for during the night bilious eructations and vomiting came on with increasing frequency, and turned rapidly to a fecaloid fluid, though destitute of stercoraceous odor. Tympanites also developed, with augmented rapidity of the pulse and with a peritonitic face, but with a lessened temperature to 102°.

When seen by me at noon the next day, it was evident that laparotomy afforded him the only hope, and that but a slight one, of relief. The patient's relatives were acquainted with its risks and its faint hopes, and they requestedits performance. This preliminary action delayed the operation till 3 P.M., when pulse was 132, temperature 99½°, and symptoms as before narrated.

An incision, at first three inches long, was made into the peritoneal cavity, and subsequently enlarged after an abscess had been detected at the brim of the pelvis, which broke under the finger's touch and allowed the escape of five or six ounces of fetid yellow pus to run over the already inflamed intestine in the pelvic cavity and adjacent parts. After the incision had been enlarged the pelvic cavity was rapidly washed out with quite hot water, and as quickly dried with sponges. The intestines were then pulled aside from the iliac fossa and the appendix exposed. To do this several feet of tympanitic small intestine had to be withdrawn from the peritoneal cavity and were kept under warm, wet towels. The appendix stood up like a child's erect penis, and was seen *in situ* to

[1] Arch. f. klin. Chirurg., Bd. 33, s. 507: Ueber die Operativen Behandlung der Aorten diffusen jauche-einjagen Peritonitis.
[2] L'Union Médicale, 1884, p. 4.
[3] Truc: Traitement Chirurgicale de la Péritonite, 1886, p. 57.
[4] Truc: op. cit., p. 55.
[5] Boston Med. and Surg. Jour., April 29, 1886.
[6] N. Y. Med. Jour., June 12, 1886.
[7] Gaillard's Med. Jour., February, 1887.

be perforated in two places. It was seized with a clamp forceps and a silk ligature carried above the forceps close to the cæcum, and after this the appendix was cut off. In the smaller and higher perforation was a mass the size and shape of a grape-seed, but which, after examination, proved to be, as is usual, a fecal concretion. The other opening was lower down and was the size of a large pea. The abscess ran from the pelvic brim across the top of the bladder, and between it and the rectum, and so near to the iliac vessels that its detection by an aspirator-needle would have endangered them. A glass drainage-tube was carried to the depths of the pelvis and another of rubber was placed in contact with the stump of the appendix, which also had been dusted with iodoform before the abdominal wound was closed. The drainage-tubes emerged from the lower angle of the wound. It had been intended to make an opening in the anterior spine for the rubber tube, but it was found to be unnecessary. The peritonitis was more marked in the inferior segment of the peritoneal cavity. The effect of the hot-water douching was unfavorable rather than otherwise. They were used not only for unantiseptic cleansing purposes (having been cooled by time from a boiling point), but also for their stimulating action, as has been claimed for such by Dr. Wylie and others. They were noticed to be associated each time with a marked deterioration of the pulse. It may have been that the heat was too great, as at first it was sufficient to be decidedly uncomfortable to my hands and those of my assistant colleague, Dr. Bull. The patient was much shocked by the operation and died four hours thereafter, with a temperature running up to 105° before death. The autopsy revealed nothing of additional moment.

In summing up these cases, it will be seen that of the twelve only three recovered, but Homan's case should be excluded from the list, as it properly belongs to the class previously commented upon where a tumor existed. It, however, bears strongly on the point of the comparatively slight risk that exists of infecting the general peritoneum in opening such abscesses by lateral laparotomy. Hall's case also, while brilliant in its results and in its treatment, might be relegated to a different class, as it had, as an incentive to the operation and as a guide, a distended hernial sac. A peculiarity of special interest is seen in the frequency with which stercoraceous vomiting occurs in these severe perityphlitic cases. It was first alluded to by Krönlein, and I have been struck by it in my investigations in other cases which were not operated on. It was met with, also, in the case of our lamented friend, Dr. Griswold, in whom, by autopsy, there was observed a perforated appendix, and in whom the symptoms were generally obscure. It is supposed to be due, in some instances, to the pressure exerted by the abscess on the terminal or fixed portion of the ileum. This feature is also mentioned by Duplay as one of the rare symptoms of a general peritonitis. Whether anything of a pathognomonic value should be attached to it in connection with a right iliac pain cannot yet be said, but in every laparotomy resorted to for obstruction the region of the appendix should be investigated. I had hoped, in reviewing the histories of abdominal section for perforations, encountered elsewhere, of the intestines—seven in number, with three recoveries[1]—that I might be able to show that the improved mortality in such cases was due to the promptness with which the belly was opened after the appearance of the first symptoms. This was only seventy-two hours in Mikulicz's celebrated case, but in Schroeder's equally successful case this point is not mentioned. Israel's case was somewhat like Hall's, but no perforation was recognized, and is considered by Mikulicz as a doubtful case. One cannot but help feeling, however, that this is an important factor in the treatment of similar rapidly progressing cases. The exhaustion of the system from such an acute infectious process as a septic peritonitis must be extremely great, and to add to this the shock of an extensive operation places the chances of recovery at great odds. Whether this can be offset by increased acuteness in diagnosis or improvement in surgical manipulations remains to be seen.

Concerning the recognition of a general perforative peritonitis, it must be admitted that many difficulties yet surround this point, but it must also be kept in mind that a serious inflammation from such causes often proceed, and rapidly, too, without many of the ordinary symptoms of peritonitis. Pain is often wanting; the same may be said of the vomiting, etc. The main purport of these remarks is to direct attention to the need of more boldness on the part of the surgeon.

Personally, with the light of experience, I should hope to make hereafter earlier resort to explorative incisions in conducting the treatment of an obscure peritonitis or of an obstruction, and would lean with more weight than some of our older surgeons and physicians do, upon what appears to them the somewhat extravagant advice of the so-called abdominal surgeons or "belly-rippers." For it appears that those most clamorous for early abdominal section are the ones who have done it most frequently, and those who protest are the ones who resort to it least; and, further, one prominent laparotomist does not, from his gathering experience, contradict the teaching of a rival laparotomist, but continually confirms it. I go over this line of thought to relieve myself from the charge of rash judgment in advocating an operation of risk in cases (1) where it is possible that delay might permit a less serious one to be performed, as in the cases of early tumor, with signs of peritonitis; and (2) where the conditions seem to be hopeless of recovery, as in those of rapidly progressing general peritonitis. Passing this by, let us ask if perhaps a variation in the surgical procedures may not be of service? In order to avoid the deterioration that comes from anæsthesia, not only in the weak state of the patient, but also with a much uplifted diaphragm, I propose hereafter either that the anæsthesia should be done away with or limited as much as possible, or cocaine substituted for it. When a general anæsthetic is given, a previous injection of atropia, one-sixtieth, with morphine can be given with advantage in this and other respects. If after the small lateral or the median laparotomy incision is made a localized peritoneal abscess is reached by the finger, as in my last case, I am inclined in my next trial, as the peritonitis often becomes less intense the farther one goes from perforation, to content myself with placing a drainage-tube in the pus-cavity and trust to the less violent methods rather than to the surgically correct procedures of washing out and sponging the peritoneal cavity, or, as Krönlein did, of wiping carefully off all the patches of lymph from the intestinal loops, etc. That it is not necessary to close up the opening in the appendix, or to remove it, is fully proved by the numerous cases of recovery where perityphlitic abscesses have discharged for some time fecal matter, and also by the preponderance of spontaneous closure observed in the larger openings found in gangrenous hernias.

Should reasons exist for more thorough work than this, and the patient's strength permit, not only might the appendix be properly tied off, but the recently made suggestion of Albert[1] may be employed. It is, as the ordinary drainage-tube can only act generally but a very short time, in consequence of the agglutination of the intestines, that a number of such tubes should be carried by small puncture through the abdominal walls into different places among the intestines. A second opening, when a median cut has been made directly over the cæcal region, certainly affords more direct drainage, as my first case exemplified.

[1] Mikulicz (recovery), Schroeder (recovery), Oberdt, Krönlein, Lucke, Godlee, and Israel (recovery).

[1] Wien. Med. Ztg., No. 10, 1887.

In recapitulation, I venture to propose:

1. That the generality of perityphlitic abscesses are due to inflammation or perforation of the appendix vermiformis.

2. That the mortality in such lesions is greatest prior to the third day.

3. That as soon as it can be recognized, pus should be evacuated extra-peritoneally, if possible, or by a lateral laparotomy, and the cavity drained.

4. That if aspiration fails to detect pus where a tumor exists, it is wiser to make an early extra-peritoneal exploratory incision.

5. That where general peritonitis is progressing, with any history of a right iliac pain, a limited lateral (preferable) or a median laparotomy should be made, to explore the region of the appendix within forty-eight hours from the inception of the disease.

6. That if pus is thus recognized, it should be evacuated and a drainage-tube inserted without toilet of the peritoneum.

Progress of Medical Science.

AN INTERMITTENT FORM OF MENINGITIS.—Dr. Henoch has described a moderate form of simple, non-tubercular meningitis, characterized by a protracted course and by alternations of exacerbation and improvement. The onset is sudden, the fever being more or less intense, with frontal headache, sometimes vomiting, and always marked rigidity of the muscles at the back of the neck, which may sometimes affect the muscles of one or other side. The fever abates, and improvement occurs after one and a half to two weeks, to be followed by a renewed exacerbation, after an interval varying from twenty-four hours to several days, without any apparent cause. These variations may be repeated frequently in the course of the next few weeks, cure resulting in from seven to ten weeks. Cases in which the remissions are not marked usually end fatally, especially when they occur during the first year of life. Treatment appears to have little or no effect on the disease, and its etiology is frequently obscure, although sometimes it seems to depend on some infectious cause. Flexion of the knee-joint, with the thigh at right angles to the trunk, as described by Kŏnig, is not always present.—*The British Medical Journal.*

PHAGOCYTES.—The suggestive doctrine that cells and bacteria are opposed to one another in a struggle for existence within the body, based upon the remarkable property possessed by leucocytes of devouring foreign material in contact with them, and employed to explain the phenomena of inflammation, the formation of giant-cells and of specific neoplasms, as well as to account for immunity after inoculation, has been criticised on the one hand and stanchly supported on the other. Professor Metschnikoff—whose researches upon the behavior of the cells of Daphnia to the spore disease that attacks this entomostracous organism formed the basis of this doctrine—returns to the subject in an article upon the "strife between cells and the cocci of erysipelas." He declares that Fehleisen's observations upon the minute anatomy of cutaneous erysipelas harmonize with the theory of phagocytes (*The Lancet*). The spreading margin of an erysipelatous patch can be differentiated into three zones: a peripheral, in which the lymphatic spaces are filled with the streptococcus in a state of active growth; a middle, exhibiting inflammatory reaction in abundance of leucocytes between the masses of cocci; and an internal, in which cocci are conspicuous by their absence. Metschnikoff examined several cases: some fatal; others, which recovered, with the view of testing the truth of his surmise that recovery from erysipelas is due to the destruction of the microbe by the phagocyte. In the one case of fatal gangrenous erysipelas he found a few disintegrating leucocytes and an abundance of cocci; in the other, where recovery took place, leucocytes were seen filled with cocci or their débris; and transitional states could be traced between these extremes in specimens derived from other cases. The inference he gathers is that in the fatal cases the streptococci gain the mastery from defective inflammatory reaction. Besides the small free leucocyte, he assigns similar properties to larger cells derived from the fixed connective-tissue elements in the subcutaneous tissue. The former he terms *microphagi*, the latter *macrophagi*, and he notes an important difference in the function of these two elements. In the subcutaneous tissue in erysipelas he finds macrophagi which do not consume the micrococci. That office is confined to the microphagi, whereas it appears to be the duty of the larger elements to consume the débris of the dead and dying leucocytes. The macrophagi therefore perform the useful function of clearing the battle-field of the slain leucocytes; and they therefore increase in size and number in proportion as the strife between the microphagi and streptococci diminishes. It reads almost like a romance, this account of the mimic warfare carried on to the death between the invading microbe and the defending leucocyte; and yet the phenomena of local infection, inflammatory reaction, resolution and absorption of the inflammatory products can all be expressed in the terms of streptococcus, microphage, and macrophage. Other factors, it is admitted, may be at work—such as pyrexia—but Professor Metschnikoff holds to the foregoing as a most probable explanation of the local phenomena. In asserting this, he has had to meet the arguments adduced by Baumgarten and others, especially with reference to the fact that in many infective diseases bacteria are found within leucocytes without any variation from the fatality exhibited, and also the fact that experimental injections into the blood of bacteria do not lead to the consumption of the latter by phagocytes. However, he meets these and other objections, and declares that Cohnheim's dictum, "no inflammation without blood-vessels," must be changed into "no inflammation without phagocytes." The doctrine is attractive, and is deserving of further study; but it cannot be said to be established, or as yet far removed from the stage of probability.

AN ENORMOUS CALCULUS.—Dr. Colson, of Aden, reports the following case in *The Lancet*: A Bedouin Arab who had come eight days' journey to Hodeedah, and thence by sea to Aden, presented himself at the Civil Hospital for treatment for calculus of the bladder. On February 1st, when on the operating-table, the stone was carefully examined with the sound and per rectum. Having come to the conclusion that the stone was a very large one, he determined on the supra-pubic operation. The bladder was injected with twenty ounces of warm water, which raised it well above the pubes. An incision about three inches in length was made vertically above the pubes, and the parts carefully dissected down until the veins above the bladder were exposed. While separating these with a director, it passed through into the bladder, which appeared soft and friable. The finger was immediately introduced through the opening, and an enormous stone was found to occupy the cavity of the organ. To extract this the original incision had to be much enlarged, and with great difficulty the stone was removed. This was found to weigh nine and a half ounces avoirdupois, and measured seven and a half inches in its horizontal and eight and a half inches in its vertical circumference. A large catheter was fastened in the bladder per urethram, and the wound in the skin closed and dressed antiseptically. The man recovered well from the immediate effects of the operation, and was doing well also in the evening. But he died suddenly on the following morning.

THE MEDICAL RECORD:

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GEORGE F. SHRADY, A.M., M.D., EDITOR.

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CRIME AND MONOMANIACAL INFATUATION.

THE Connecticut Legislature has recently enacted a law for the prolonged confinement of incorrigible criminals, *i.e.*, persons who have been sentenced three times for a period of not less than two years. The law provides that at the expiration of the third sentence the criminal shall be detained in prison for twenty-five years. This is a wise law, and fully in accordance with the modern teachings of alienists and penologists.

In an article in the *Journal of Nervous and Mental Diseases* for May, 1887, Dr. William Duffield Robinson gives an interesting account of this "crime-class," to which the law just referred to applies. He states that the major part of State-prison offences are the acts of men born to crime. These people very seldom reform. They have as little control over their inclinations to violate law, as has the confirmed inebriate over his desire to drink. They are not intemperate, as a class, but are given to venery. Their intelligence varies greatly, but as a rule they possess great cunning and adroitness, though ignorant and illiterate. With this class crime, says Dr. Robinson, is unquestionably "a monomaniacal infatuation."

These congenital criminals often show physical imperfections of various kinds. The shape of the cranium and the arrangement of the convolutions are, according to some, very characteristic. Twenty per cent. at the age of forty years have had syphilis; ten per cent. develop insanity some time before their death, as against 0.2 per cent. among the whole population. There is a startling proportion of tubercular disease in their families. Epilepsy and other nervous diseases are also very common. About six per cent. of the convict population shows a strong inherited tendency to insanity; over seventeen per cent. shows family histories of crime, and where two or more families are convicts, they will show a *penchant* for a peculiar class of crimes.

Among 3,500 convicts received into the Eastern State Penitentiary of Pennsylvania, in the past five years, 245 were insane, 40 had insanity developed during confinement, while 20 were guilty of simulating insanity.

There are thus facts enough to convince any intelligent person that we do have a crime-class, that its members are born with impulses to commit crime, which impulses are as uncontrollable as those of the epileptic or the insane. We do not forget that many persons, apparently congenital criminals, are really criminal through education and association. It remains to be shown that the children of the crime-class, if put under perfectly good surroundings, would not develop into useful citizens. Making all due allowances, however, there does exist a crime-class not entirely responsible; and the best way to deal with it is to isolate and stamp it out, as the Connecticut Legislature proposes to do.

MEDICAL SLANG.

THE microscopist in this city who speaks of his slides as "toboggans" is only following a very prevalent custom among many of our younger medical men, of using slang phrases in place of the dignified terminology of pure science. This practice of substituting highly idiomatic Saxon or time-saving abbreviations for the pure phraseology of the text-book, has reached such extent that it needs a passing notice.

Illustrations of it are plentiful. Thus, one finds that sufferers from the most terrible of specific disorders are lightly referred to as having "syph," and that pregnant monosyllable is also applied to the whole science of syphilography. Students in pathology find that they are taking a course in the "bug-class" of the distinguished bacteriologist who is only a "bug-man." By the same rules of condensation eminent specialists in laryngology, ophthalmology, dermatology, etc., are only "throat-" or "nose-men," "eye-men," and "skin-men." Gynecologists devote themselves to a specialty which, in the iconoclastic vernacular of to-day is referred to as "woman's."

It would be somewhat horrifying for the laity to learn of all the various apparently unsympathetic synonyms applied in hospitals to the sad *exitus lethalis* of the patients. To the poet and the preacher the "spirit takes its flight," but to the *interne* the patient has simply "pegged out," and the question is not as to the destination of his soul, but the disposition of his body.

It would be indelicate to say what term is applied to the classes in that most useful branch of knowledge, urinary analysis, and it would be ungracious to quote the pure Saxon by which the enthusiasts in laparotomy are designated.

Medical slang is a thing which is inevitable, and its use is not altogether to be deprecated. There is a deal of virility and meaning in many slang expressions; and we only need express the desire that these be neither excessively multiplied nor indelicately used.

DRUGGED BEER.

THERE is a growing belief among sanitarians that salicylic acid is being used more and more extensively in the preservation of canned foods, milk, wine, beer, and other articles. To such an extent was this done in Paris that the French government has already twice taken action upon the matter. Dr. E. H. Bartley, Chemist to the Brooklyn Health Department, has recently called attention to this matter. He states that in 1885 the chief adulterations which he found in beer were yeast and bicarbonate of soda. Lately he has examined several different kinds of bottled beer sold in Brooklyn, the list including some of the Western beers. He has found salicylic acid in

them. The amount of this acid required to preserve beer is about twelve to fifteen grains per gallon. Salicylic acid, if taken continuously, tends to injure digestion and irritate the kidneys.

THE HEART-BEAT AND THE RESPIRATORY CHANGES.

It is an established fact in physics that if a liquid containing a gas be placed in a vacuum only a small part of the gas escapes, unless the liquid be subjected to a blow just before the exhaustion process is commenced. Professor Von Fleische, of Vienna, has applied this fact in a study of the relation between the heart-beat and the respiratory changes in the lungs. He thinks that the blood, in the pulmonary arteries containing the carbonic-acid gas in solution, is jarred by the motion of the heart, and in this way assistance is given in setting free the CO_2. It is quite true, as Von Fleische claims, that the physics of the process by which this gas passes from the blood-serum to the air in the alveoli has been obscure, because there is little difference between the pressure in these spaces and in the blood. Von Fleische's theory affords a plausible explanation. If it is true, then cyanosis from weak heart is due, in a measure at least, to the feeble impact of the heart-muscle, and externally applied blows ought to relieve dyspnœa. The facts of comparative anatomy are claimed in support of the view just described.

THE TREATMENT OF TUBERCULOSIS OF THE LARYNX.

In the treatment of tuberculous ulcerations of the larynx Dr. A. Rosenberg, of Berlin, applies a five to twenty per cent. oily solution of menthol to the affected parts. The solution is sprayed into the larynx, at first once or twice daily, then less often. The effect is said to be "extraordinarily favorable." Menthol, in proportion of 1 to 33,000, inhibits life in anthrax bacilli, and presumably in tubercle bacilli. It is on the ground of its anæsthetic and antiseptic properties that the agent is used.

Dr. V. Brunn, of Lippspringe, has been using twenty to forty per cent. solutions of lactic acid in laryngeal tuberculosis, according to the recommendations of H. Krause. He has obtained excellent results with this, and speaks of it as "a true panacea." But in some very sensitive patients the application is too irritating, and provokes great pain, coughing, and feelings of suffocation. Dr. Brunn therefore tried a twenty per cent. oily solution of menthol, according to the method of Rosenberg. He confirms the views of that observer as to the utility of the applications. He now employs the lactic acid in persons of strong build and lymphatic temperament, the menthol in those of a weak and irritable constitution.

Lactic acid and menthol seem likely to play the leading part which iodoform took in laryngeal tuberculosis some years ago.

HOSPITAL AT DAMASCUS.—Dr. Macinnon, of the Scottish Medical Mission, has recently opened a hospital for poor patients at Damascus. The fanaticism of the Mohammedan population has forced the government to close it, and Sir W. White is now making representations to the Porte to grant the hospital its protection.

News of the Week.

THE ILLNESS OF PROFESSOR BILLROTH.—A recent despatch from Vienna says: "All classes of the Vienna population are deeply moved by the dangerous illness of Dr. Billroth, a surgeon of world-wide reputation Hundreds of students and others stand before his house to hear the latest news. Dr. Billroth is suffering from fatty degeneration of the heart, together with inflammation of the lungs.

THE SOCIETY PAPERS OF LONDON announce that "Dr Harrison, of America," is lecturing successfully "to men only" at Prince's Hall, London. Dr. Harrison is spoken of as "highly intelligent and racy"—to men only, we presume.

A DOCTOR'S KINDNESS TO THE CLERGY.—A clergyman writes to *The Lancet* that the late Dr. Wilson Fox was in the habit of placing his beautiful house at Rydal at the disposal of the Bishop of Bedford for the use of the invalided East End clergy and their families during the summer months. The liberality, kindness, and delicacy with which this was done will be understood by all who knew him.

THE WEST VIRGINIA STATE MEDICAL SOCIETY will hold its twentieth annual session at White Sulphur Springs, W. Va., July 13, 14, and 15, 1887. The Secretary is J. L. Fullerton, M.D., of Charleston, W. Va.

THE DEATH OF DR. CARL FRIEDLÄNDER, of Berlin, is announced. He was well known for his contributions to pathological anatomy, and was editor of the *Fortschritte der Medicin*.

A SCHOOL OF PHARMACY is to be opened in connection with Cornell University during the coming fall. Women and men are to be admitted.

THE CAUSE OF GROUSE-DISEASE.—M. Pasteur is to make an investigation into the cause of grouse-disease.

SPECIALISM IN EXCELSIS.—*The Lancet* grows facetious in the following manner. Under the title of "Specialism in Excelsis" it says: "We have received a programme of the first annual meeting of the 'Association of Genito-urinary Surgeons,' which is being held this week at the Laurel House, Lakewood, N. J. The establishment of this association has been attended with so much success, and commends itself so thoroughly to the more enlightened members of the profession, that many similar ones are shortly to be inaugurated. Among those more immediately to be promoted are associations of 'Umbilicologists,' of 'Rhinologists,' of 'Tenotomists,' of 'Depilatory Surgeons,' and of 'Skin-grafters.' The only reason we can perceive why this list should not be indefinitely extended is that surgery, as an art, would, by such differentiation, speedily be resolved into its constituent elements, and its professors broken up into repellant groups of solemn deliberators on the utility and beauty of the segregation of parts."

FOR THE ARREST OF CANCER.—Dr. Peter Hood (*The Lancet*) recommends a three months' course of carbonate of lime for the arrest of cancerous growths. Dr. Hood first called attention to this twenty years ago. Further experience leads him to recommend the plan again.

Reports of Societies.

American Medical Association.

THIRTY-EIGHTH ANNUAL MEETING.

Held in Chicago, Ill,, June 7, 8, 9, and 10, 1887.

[By Telegraph to The Medical Record.]

TUESDAY, JUNE 7TH—FIRST DAY.

The Association met in Central Music Hall, and was called to order at eleven o'clock by the Chairman of the Committee of Arrangements, CHARLES GILMAN SMITH, of Chicago. Prayer was offered by REV. S. J. MCPHERSON, D.D., and the address of welcome was made by Mayor JOHN A. ROCHE.

The ex-Presidents were invited to take seats upon the platform, and N. S. Davis, of Chicago; T. G. Richardson, of New Orleans; J. M. Toner, of Washington, and William Brodie, of Detroit, responded to the invitation.

DR. P. H. MILLARD, of Stillwater, Minn., First Vice-President, being in the Chair,

DR. SMITH then introduced the President, DR. E. H. GREGORY, of St. Louis, who delivered the

ANNUAL ADDRESS,

in which he congratulated the Association on the auspicious opening of its annual meeting, and expressed his high appreciation of the honor bestowed upon him by elevating him to the presidency. He then said that force and matter make up the universe; that force implies antagonism; that antagonism perpetuates motion; that a living cell is the embodiment of nature; that cell-antagonism is life, and that a model organism in equilibrium is health. The comprehensive title of his paper was "Cell-Antagonism," which forms the foundation of symptomatology and pathology, and, conjoined with the cell-changes constituting the basis of pathological anatomy, presses at once the universe of life, disease being but one of the multitudinous phases of life.

Cell-antagonism constitutes the essential of pathology. Inflammation, the keystone of medical science, is only to be explained on the theory of cell-antagonism—a struggle between irritant bodies and white blood-cells. Cells live on themselves, by themselves, and for the whole body. The giant-cells are formed by the uniting of the budding processes from the amœboid mass of protoplasm. These giant masses of protoplasm appear in lupus and tubercle, and in their substance the bacillus is found. With the observations before us concerning cell-antagonism inflammation presents a new aspect. He then outlined the view that there is a struggle between encocytes and bacteria, and that when the microbes prevail suppuration takes place. From this could be seen the close relation between Pasteur's work of preventive inoculation and Lister's equally important work in devising methods by which the microbes can be rendered harmless. Some time was devoted to the consideration of the question, whether or not a cell can enter upon a life of independence, and from this he passed to Cohnheim's theory of the etiology of tumors, namely, persistence of germinal rudiments. Emancipation of cells seems to be almost out of the question.

The President then referred in fitting words to the death of W. O. Baldwin, ex-President of the Association. The address closed with a reference to the coming International Medical Congress, the success of which is assured. He urged the Association to welcome all to the great gathering.

The address was referred to the Committee on Publication, and a vote of thanks given to the President.

DR. A. NELSON BELL, of New York, offered under the head of "Reports of Special Committees" the

REPORT OF THE COMMITTEE ON IMMIGRATION,

which by accident failed to reach the Association last year. The report was read and the committee presented the following resolution, which was adopted:

Resolved, That the Secretary of the Association be and is hereby directed to transmit copies of this report to the Secretary of the Treasury of the United States, and to both the Senate and House Committees on Commerce, and urge upon them such action, through Congress or otherwise, that will secure better protection of the lives and health of immigrants coming to the United States, and against the reception of dependent persons.

DR. D. J. ROBERTS, of Tennessee, introduced a wordy preamble and a set of resolutions condemning an editorial on the American Medical Association that appeared in the Chicago *Times*. He regarded the Times as sadly out of joint, and wished to deny that

CHICAGO IS UNFAVORABLE FOR HARMONIOUS MEDICAL ACTION,

and protested against the statement that the orthodox medical men of this region are beyond doubt the most bigoted and intolerant in the nation.

DR. DUDLEY S. REYNOLDS, of New York, moved the adoption of the resolutions.

DR. EUGENE GRISCOM, of North Carolina, moved that they be laid upon the table, which was carried by 133 ayes and 89 nays.

On motion by DR. WILLIAM BRODIE, of Detroit, the amendment to the by-laws providing for a section in dermatology and venereal diseases was taken from the table.

On motion by DR. G. H. ROHE, of Baltimore, the amendment was amended so as to read dermatology and syphilography and then adopted.

DR. J. MCF. GASTON, of Atlanta, Chairman of the Committee to Memorialize Congress with reference to

INOCULATION FOR YELLOW FEVER,

presented the report, which was referred to the Section on State Medicine.

At the meeting of the

ASSOCIATION OF AMERICAN MEDICAL EDITORS

William Porter, of St. Louis, was elected president; Thomas J. McIlvaine, of Peoria, vice-president, and W. C. Wile, of Philadelphia, secretary and treasurer.

The Entertainment Committee made generous arrangements for demonstrating the hospitality of the city.

WEDNESDAY, JUNE 8TH—SECOND DAY.

The Association was called to order by the President, and prayer was offered by REV. MR. GUNSAULUS, of Plymouth Church.

DR. J. M. TONER, of Washington, Chairman of the Board of Trustees for the

PUBLICATION OF THE JOURNAL OF THE ASSOCIATION,

read the annual report, which included the report of the editor, N. S. DAVIS, of Chicago, who has consented to remain the managing editor of the *Journal* for another year. The report stated that the general success of the *Journal* had been more gratifying during the year than could have been expected. The report of the editor showed that there had been a net increase of subscribers of 104 during the year; that the total editorial expense, including society reports, correspondence, etc., had been $2,758.95; that the total expense of publishing the *Journal* had been $15,920.96; that the total cash value of the property on hand is $1,058.56. The net increase on the subscription list included new names that had been added, balanced by those which had been dropped for non-payment of dues. The editor recommended more permanent arrangements affecting publication and printing than now exist.

The report was accepted and adopted.

DR. ROBERTS, of Tennessee, asked permission to withdraw his resolutions, which were tabled yesterday, because the Chicago *Times* had made satisfactory acknow

ledgment regarding its unwarranted reflection on the regular medical profession of this city and portion of the country. His request was granted.

Dr. N. S. Davis, of Chicago, chairman of the

SPECIAL COMMITTEE ON CHANGES IN THE PLAN OF ORGANIZATION AND BY-LAWS OF THE ASSOCIATION,

made an elaborate report, in which were reviewed the geographical and medical extent of our country; the plan of organization and operation of the British Medical Association; the present relation which exists between the American Medical Association and the State and county medical societies and the national and local organizations. The Committee reached the conclusion, after a most careful study of the development of medical organizations at home and abroad, that it could not recommend any radical changes in the existing plan of organization of this Association.

There were, however, certain defects in the present plan and its by-laws that could be remedied with advantage, and the Committee recommended that the method of admission to membership by application be so amended as to include such members of State, county, and district medical societies entitled to representation in this body as shall make application in writing to the treasurer, and accompany said application with a certificate of good standing signed by the president and secretary of the society of which they are members, together with the amount of the fee for membership, five dollars. Such members shall have their names entered upon the roll and be entitled to all the privileges of permanent members, and shall retain their membership on the same terms as though they had obtained permanent membership by serving as delegates. In the fifth section of the constitution, the Committee recommended that paragraphs one and three be stricken out, and that in place of the first paragraph there be substituted the following important provision: The general committee on council shall be composed of two members from State and Territorial medical societies represented by delegates to this Association, and from the medical departments of the Army, Navy, and Marine Hospital Service. They shall be chosen by the members registering and present at the annual meeting, these organizations acting separately. There were further provisions making the term of office two years. This general committee shall meet on the day preceding that fixed for the meeting of the Association, and as often during that week as may be necessary; and for the purpose of nominating on the third day of each annual meeting all the officers, none of whom shall be members of their own body—he judicial council, the board of trustees for the *Journal*, etc., and all for election by the Association. This committee shall also recommend a place and time for the annual meeting, consider and report on all subjects which may be referred to it by the Association, and particularly all propositions introduced which involve appropriations of money. These recommendations, the chairman said, simply put in due form and proper place the regulations that had actually been in operation for the past four years under resolutions adopted at the annual meetings in 1882 and 1883.

As to the by-laws, the Committee recommended that they be so amended that the chairmen of sections shall be required to prepare addresses on the recent advancements in their departments, to be read before the sections on the first day of the annual meetings; such addresses not to occupy more than forty minutes in their delivery. This method is now practised in the British Medical Association. An additional by-law was recommended providing that three members of the profession shall be elected by the Association to deliver addresses in the general sessions of the Association at the next ensuing annual meeting, and that each address shall not occupy more than one hour in its delivery.

All these changes recommended had for their object the better adjustment and more practical development of the systematic general organization of the medical profession in our country, and these principles of equality and just representation in direct accord with the habits of our people and the methods of our institutions.

The report did not give rise to discussion other than that relating to the question whether or not the proposed amendments could be adopted at this meeting, or must lie over for one year.

Dr. A. N. Bell, of New York, moved that it was the sense of the Association that these proposed amendments hap been practically considered according to the requirements of the constitution for one year.

Carried—ayes, 272; nays, 232.

Motions, counter-motions, amendments, previous questions, and points of order were offered in profusion, but the President decided that the report of the committee had been accepted and adopted, and that this adapted the proposed amendments to the constitution and by-laws.

The Secretary, W. B. Atkinson, of Philadelphia, announced the Committee on Nominations: Alabama, W. C. Cross; Arkansas, D. C. Ewing; California, J. W. Robertson; Colorado, P. Brumund; Connecticut, W. H. Whittimore; Dakota, E. M. Dow; District of Columbia, J. M. Toner; Florida, M. B. Phillips; Georgia, A. G. Whitehead; Illinois, E. P. Cooke; Indiana, T. B. Harvie; Iowa, W. W. Watson; Kansas, W. L. Schen; Kentucky, Dudley S. Reynolds; Louisiana, T. G. Richardson; Maine, D. E. Marston; Maryland, T. B. Evans; Massachusetts, E.W. Cushing; Michigan, William Brodie; Minnesota, J. A. McGaughey; Mississippi, T. R. Trotter; Missouri, J. M. Allen; Nebraska, W. M. Knapp; North Carolina, Eugene Griscom; New Hampshire, J. W. Parsons; New Jersey, Lott Southard; New Mexico, Russell Bailey; New York, Darwin Colvin; Ohio, X. C. Scott; Pennsylvania, E. A. Wood; Rhode Island, W. J. Burge; South Carolina, T. Legare; Tennessee, J. B. Murfrie; Texas, R. W. Park; Vermont, S. H. Griswold; Virginia, L. M. Nash; Wisconsin, J. K. Bartlett; United States Navy, D. Bloodgood; United States Marine Hospital Service, Charles B. Goldsborough.

The following resolution, sent by the American Pharmaceutical Association, was read and adopted:

Resolved, That this association solicits the aid and co-operation of the American Medical Association in promoting the prescribing of official medicines only, or such preparations as have published formulas, in preference to others.

THE ADDRESS OF THE CHAIRMAN OF THE SECTION IN THE PRACTICE OF MEDICINE

was delivered by Dr. John S. Lynch, of Baltimore. The chairman first directed attention to the use of antipyrin, which he had found to be uniformly useful in all febrile diseases. After a brief reference to digitalin, he took up the subject of pulmonary phthisis, and Koch's theory of its dependence upon a bacillus. If contagious or infectious, it differs from all other diseases belonging to this class. While he denied that the bacillus is the sole or frequent cause of this disease, it may have some pathological influence in the development of conditions that favor the development of phthisis, especially caseous degeneration. The danger from bad hygienic surroundings he regarded as greater than that from direct contagion. As to treatment, he could report nothing in favor of Bergeon's method of rectal injections of sulphuretted hydrogen-gas. He believed there was nothing in this treatment except money for the sharks and charlatans, and that antiseptic treatment must remain impossible. Any germicide which can destroy the microbes must kill the patient. The address had one merit, namely, that of brevity.

There was no address in Surgery.

The Association then adjourned to meet on Thursday at 10 A.M.

THURSDAY, JUNE 9TH—THIRD DAY.

The Association was called to order by THE PRESIDENT, and prayer was offered by REV. JOHN A. BARROWS, D.D.

A telegram from the Ontario Medical Association, sending congratulations, was received, and was responded to by sending sympathy and good-fellowship from the American Medical Association.

DR. BRODIE, of Detroit, Chairman of the Committee on

NOMINATIONS,

made the following report:

President—A. Y. P. Garnet, of Washington.

First Vice-President—Duncan Eve, Nashville, Tenn.

Second Vice-President—Darwin Calvin, Clyde, N. Y.

Third Vice-President—Charles J. O. Hagan, North Carolina.

Fourth Vice-President—A. Stedman, Colorado.

Librarian—C. H. A. Kleinschmidt, Washington.

Treasurer—R. J. Dunglison, Philadelphia.

Permanent Secretary—W. B. Atkinson, Philadelphia.

Assistant Secretary—Joseph Ransohoff, Cincinnati.

Trustees of the Journal—Leartus Connor, Detroit; E. O. Shakespeare, Philadelphia; W. T. Briggs, Tennessee.

Judicial Council—J. H. Murphy, St. Paul; J. M. Toner, Washington; J. K. Bartlett, Milwaukee; A. B. Sloane, Missouri; X. C. Scott, Cleveland; A. W. McLuer, Iowa; D. W. Stormont, Kansas; J. H. Hibberd, Indiana.

Committee on Necrology—J. M. Toner, Chairman.

Committee on State Medicine—R. G. Jennings, Little Rock, Chairman.

THE NEXT ANNUAL MEETING

is to be held at Cincinnati on the second Tuesday in May, 1888. Chairman of Committee of Arrangements, Dr. W. W. Dawson, of Cincinnati, with power to fill the Committee by appointment.

OFFICERS ELECTED BY THE SECTIONS.

Surgery—Donald McLean, Ann Arbor, Chairman; B. A. Watson, Jersey City, N. J., Secretary.

Medicine—A. B. Palmer, Ann Arbor, Chairman; N. S. Davis, Jr., Chicago, Secretary.

State Medicine—H. B. Baker, Lansing, Mich., Chairman; S. T. Armstrong, Tennessee, Secretary.

Children—F. E. Waxham, Chicago, Chairman; W. B. Lawrence, Batesville, Ark., Secretary.

Dental and Oral Surgery—J. Tafft, Cincinnati, Chairman; E. S. Talbot, Chicago, Secretary.

Ophthalmology and Otology—F. E. Hotz, Chicago, Chairman; H. H. Jackson, Philadelphia, Secretary.

Dermatology and Syphilography—L. Duncan Bulkley, New York, Chairman; T. Fayette Dunlap, Secretary.

Medical Jurisprudence—E. M. Reid, Baltimore, Chairman; Dr. Belt, Boston, Secretary.

A question arising concerning the

AMENDMENTS TO THE CONSTITUTION AND BY-LAWS

acted upon yesterday, DR. ROBERTS, of Tennessee, moved that further action in accordance with them be postponed until next year; which was amended by DR. N. S. DAVIS, of Chicago, that the proposed amendments to the constitution be not adopted, but lie upon the table subject to ratification in proper order at the opening of the next annual meeting, and then unanimously adopted.

DR. G. H. ROHE, of Baltimore, in the absence of Dr. A. L. Gihon, Chairman, read the report of the

COMMITTEE ON A MONUMENT TO BENJAMIN RUSH,

which showed that $389 had been received. In connection with the report was read a letter from Mr. Hack Tuke, of England, wishing the project success. The report was referred to an Auditing Committee, consisting of Eugene Grissom, of North Carolina; A. Garcelon, Maine, and A. B. Palmer, Ann Arbor, which subsequently reported that the accounts had been found to be correct.

DR. JOHN MORRIS, of Baltimore, in the absence of Dr. J. M. Keller, of Hot Springs, Ark., read the report of the

SPECIAL COMMITTEE ON CREMATION,

which closed with the following resolution:

Resolved, That it is the judgment of this Association that burial of persons dying of zymotic diseases should be placed by law under the control of health authorities.

On motion by Dr. Morris the report was referred to the Section on State Medicine.

DR. J. MCF. GASTON, of Atlanta, Ga., introduced the following resolution, which was opposed by Dr. G. H. Rohe, of Baltimore, but was adopted:

Resolved, That it is the sense of this Association that it is desirable that two other members of the medical profession be associated with the Committee on Inoculation of Yellow Fever already appointed, and that a committee of three be appointed to communicate this action to President Cleveland.

DR. F. M. JOHNSON, of Kansas City, Mo., delivered the

ADDRESS OF THE CHAIRMAN OF THE SECTION ON OBSTETRICS AND DISEASES OF WOMEN AND CHILDREN.

The past year has given but few remarkable discoveries in either obstetrics or gynecology. Reference was then made to tubal diseases, and the ease and lack of danger with which the operation can be performed, diagnosis being made certain. The practice of leaving a portion of an ovary is of questionable propriety. Electricity has become well established as a therapeutical agent in gynecology. Reference was also made to cocaine as a local anæsthetic, to the use of nitrate of silver for early discovered lacerations of the cervix, and also to Alexander's operation, which he believed would not stand the test of time. In obstetrics, modified Cæsarean section was probably destined to succeed the use of forceps or version in certain cases.

Extended allusion was made to A. F. A. King's paper on the renal troubles and eclampsia of pregnancy and labor, and from this the Chairman passed to the use of ergot and the management of the placenta. A diversity of opinion exists as to the utility of uterine and vaginal injections during the puerperal period, but the application of antiseptic principles in obstetrics was no longer a question, for the decided reduction of mortality in hospitals was an unanswerable argument in their favor. Better success would be secured in the general use of antiseptics if a broader view of the subject were taken, and more attention paid to the principles of treatment, with less adherence to doctors' methods of carrying it out than has heretofore obtained.

THE ADDRESS OF THE CHAIRMAN OF THE SECTION ON STATE MEDICINE

was given by DR. G. H. ROHE, of Baltimore.

The record for State medicine during the past year is a creditable one. As to cholera, the danger of invasion of this country is at present greater than at any time within the past three years. Reference was then made to yellow fever inoculation, the method now being subjected to an official investigation, authorized by the Government. Diligent search has been made for the specific organism supposed to be the infective agent in vaccine virus, but without definite success. The results obtained are not entirely negative, however, and one may cherish the hope that a solution of this problem will soon be reached. The relation of a peculiar disease in cows to scarlet fever, and the discovery of a specific microbe in the blood in the latter disease, have attracted much attention.

The restriction of scarlet fever will doubtless be more thoroughly effected so soon as physicians are convinced of its bacterial nature and clearly comprehend its mode of transmission. Measures for the restriction of pulmonary tuberculosis were adverted to. Tuberculous patients should not be treated in the same hospital wards with non-tuberculous individuals, and prompt disinfection of the sputa and other discharges should be practised, in order to diminish opportunities for infection. General sanitary measures should, however, not be neglected in the warfare upon the bacillus. There is danger that a too exclusive attention to the microbian factors of disease will narrow our views of epidemiology and preventive medicine.

It seems to be established that the micro-organism discovered in the intestinal lesions and discharges in typhoid fever is the cause of this disease. The fact that this microbe may preserve its vitality for a considerable time in water and ice has been shown by Bolton, Wolff-Hügel, Prudden, and others. This, together with the well-known history of outbreaks of this disease, undoubtedly depending upon pollution of drinking-water, should make prompt measures of disinfection imperative in every case. The physician fails in his duty who neglects measures for the thorough destruction of the typhoid infection existing in the intestinal discharges. The importance of disinfection of bedding, clothing, and other personal and household articles in contagious diseases, demands that health authorities should have under their control establishments where disinfection can be carried out on a large scale and at public expense. Quarantine—a word which for more than five centuries has been synonymous with barbarism—is becoming, under methods, a safeguard to the public against infection, and an advantage instead of obstruction to commerce.

Cremation of garbage seems to be the best method yet devised for the inoffensive destruction or final disposal of solid city wastes. The irrigation system of sewage disposal has steadily won favor.

Professor Vaughan's discovery of a very poisonous ptomaine in cheese, ice-cream, and milk undergoing certain chemical changes, has been confirmed by a number of investigators in various parts of the country. Analyses of food and drugs, made during the year in Massachusetts and New York, show the wide extent to which adulteration is practised, and how the people are defrauded. Authority and means should be given to the health authorities to protect the public from these frauds, many of which are a source of danger to life and health.

Statistics collected by the speaker show that five-sixths of the inhabitants of cities in this country have no facilities for bathing, except such as are afforded by a pail and sponge, or an easily accessible river, lake, or other body of water. The establishment of public baths is urgently recommended, both as a sanitary as well as moral measure. Public baths should be open the year round, and not alone during the summer.

A number of instances are grouped together showing how the enforcement of appropriate sanitary measures has saved life. In Michigan the saving of life from one disease (scarlet fever) has amounted, during the last eleven years, to 3,718, or three hundred and thirty-nine per year. In 1886 appropriate sanitary measures saved the lives of 298 persons who would have died of diphtheria if such measures had not been enforced. In England and Wales the average annual saving of life due to sanitary measures has amounted, in the five years ending 1885, to 62,000. While all advances in sanitary administration have doubtless contributed to produce these good results, the main influence is to be attributed to three factors. These are: Compulsory notification of infectious disease, prompt and effective isolation of the sick and infected, and thorough disinfection of all infected articles and sources of infection. These must be the watchwords of the practical sanitarian of the future.

Dr. G. S. Knox, of Chicago, presented the

ADDRESS OF THE CHAIRMAN OF THE SECTION ON DISEASES OF CHILDREN.

The address was read in abstract, and had for its subject diatheses in diseases of children. The speaker brought out concisely the relation existing between diseases in children and the tubercular, syphilitic, and rheumatic diatheses.

The treasurer's report showed a balance in the treasury of $1,403.77.

The librarian's report was read, and placed on file.

THE COMMITTEE ON FINANCE OF THE INTERNATIONAL MEDICAL CONGRESS

asked for an appropriation of money. After stirring speeches, in which were set forth the pressing and urgent financial needs of the Congress, one thousand dollars were appropriated, and it was earnestly hoped that every member of the Association would make immediate and liberal contributions, besides the amount required for membership.

Dr. N. S. Davis, of Chicago, offered the following resolutions, which were made the special order for Friday at the conclusion of the address:

First, That regular graduates of dental and oral schools and colleges which required of their students a standard of preliminary or general education to the term of professional study be recognized as members of the regular profession of medicine and eligible to membership in this Association on the same conditions and subject to the same regulations as other members.

Second, That the Committee of Arrangements are hereafter directed, at each annual meeting of this Association, to so arrange the programme regarding entertainments and receptions that the evening of the third day be reserved for the regular annual dinner, under such regulations that the members may dine with or without wine, according to choice, and pay only for what they elect to have furnished, and that that be the entire cost of the dinner, leaving no part to be paid either by the local profession or the treasurer of the Association.

Dr. Burge, of Brooklyn, introduced resolutions, which were adopted, and which directed the Committee of Arrangements hereafter to adopt some efficient means for preventing conversation and noise in the hall while the general sessions of the Association are had.

The Association then adjourned, to meet on Friday at 10 A.M.

Friday, June 10th—Fourth Day.

The Association was called to order by The President, and prayer was offered by the Rev. W. H. Vibbert, D.D.

The address of the Chairman of the Section on Dental and Oral Surgery was delivered by Dr. J. S. Marshall, of Chicago.

Dr. J. M. Quimby, of Jersey City, N. J., read the

ADDRESS OF THE CHAIRMAN OF THE SECTION ON MEDICAL JURISPRUDENCE.

He first gave an outline of the history of medical jurisprudence from the early periods of Hebrew, Greek, and Roman antiquity. The only medical laws of which we have any distinct account during the Dark Ages were for the prevention of infectious diseases at Venice, A.D. 1127. But special quarantine regulations, scarcely worthy of the prefix medical, were not established until more than two centuries later. The cloud began to lift, in the early part of the sixteenth century, under the reign of Charles the Fifth. The Criminal Code of the German Empire, enacted in 1532, contains the first appreciation of rational medicine in union with law. This justly celebrated code requires that physicians shall be called by the courts in all cases where death has been the result of violent means, whether accidental or criminal. The office of

coroner is as ancient as A.D. 905, and originated among the Saxons. The functions of the coroner in England and France were then described, and it was seen that more weight appeared to have been attached to the importance of medical testimony in coroners' cases in France two centuries ago than now obtains in the United States.

Medical jurisprudence was first taught in the medical schools in Germany in the latter part of the eighteenth century. But the first professorships were created in France in 1792, and in 1803 the University of Edinburgh followed the example. No similar chair was established in England, however, until sixteen years after. It was taught in a course of lectures in Columbia College, New York, by James S. Stringham, professor of chemistry, in 1817, who was succeeded by John W. Francis.

The preservation of fœtal and infantile life was then considered, and he suggested that a special committee be appointed by the Association to report at the next annual meeting upon the criminality of fœticide and such measures as may be commended for legislative action for its prevention and punishment. Attention was directed to the duties exercised commonly by coroners and the means of improving medical police in regard to immigration, with special reference to the detection and prohibition of chronic invalids and insane persons.

The address closed with a special reference to the medical jurisprudence of drunkenness.

Dr. J. M. Toner, of Washington, presented the

REPORT OF THE COMMITTEE ON NEUROLOGY.

Dr. N. S. Davis, of Chicago, reported from the Standing Committee on Meteorological Conditions and their relations to the prevalence of disease; also concerning the collective investigation of disease in co-operation with the committee of the British Medical Association.

The customary

RESOLUTIONS OF THANKS

to all who had contributed to the success and pleasure of the meeting, to the citizens and the profession of Chicago, to the railroads which had given reduced rates, to the Chairman of the Transportation Committee, and to Assistant Secretary Listo H. Montgomery, of Chicago, to the various committees and their chairmen, and to the President, were adopted.

A telegram from Dr. Garnett was received, acknowledging the high honor conferred upon him in electing him President.

The Association then adjourned.

THE ASSOCIATION OF AMERICAN PHYSICIANS.

Second Annual Meeting, held at Washington, D. C., June 2 and 3, 1887.

THURSDAY, JUNE 2D—FIRST DAY—MORNING SESSION.

THE meeting was called to order at ten o'clock by the President, Dr. S. Weir Mitchell, of Philadelphia, who delivered a brief address. He reported the death of three members—Dr. Thomas F. Rochester, of Buffalo; Dr. Thomas A. McBride, of New York; and Dr. E. D. Hudson, Jr., of New York.

After the transaction of routine business, the first paper, entitled

CIRRHOSIS OF THE LIVER IN CHILDREN,

was read by Dr. R. Palmer Howard, of Montreal.

He reported two cases in which cirrhosis of the liver was present in children, brother and sister. He exhibited sections of the organ.

DISCUSSION.

Dr. William W. Welch: I recall a case of cirrhosis in a child twelve years of age. He came from the coast of Africa, and suffered with malaria. Both the liver and spleen were deeply pigmented. The clinical features of the case could not be obtained. Most of the cases of cirrhosis of malarial origin have been reported from the coast of Africa. Very little has been brought forward in this country with regard to the malarial origin of cirrhosis.

Dr. F. Forsheimer, of Cincinnati: I have seen two cases that may possibly be called cirrhosis. One was that of a child of eight years. At the post-mortem the characteristic hob-nail liver was found. In this case I considered the cirrhosis due to syphilis. The second case is now under observation in the Children's Hospital of Cincinnati, the patient being in the last stage of cirrhosis. In this case there is a history of syphilis, and the child has hereditary syphilis of the nervous system. To my mind it is clear that syphilis is the most common cause of cirrhosis of the liver in children.

Dr. William Pepper, of Philadelphia: I have the complete records of a case in which cirrhosis of the liver followed measles in a child eight years of age. There was no syphilitic history. During the attack of measles there were symptoms of hepatic disorder, as shown by occasional attacks of catarrhal jaundice. Subsequently the symptoms of developing cirrhosis made their appearance, and death in a comatose condition finally occurred. The whole duration of the case could not have been less than a year. At the autopsy a typical hob-nail liver was found. The liver had been much enlarged, but it had gradually contracted so that at the time of death it was of about the normal size.

OBSTRUCTIVE SAFETY-VALVE ACTION IN THE HEART, AND DIRECT FUNCTIONAL MURMURS,

was the title of a paper by Dr. John Guiteras, of Charleston. In a previous paper, on malignant endocarditis, the author had dwelt upon the significance of mitral direct presystolic murmurs, which were proved by the autopsy to be unconnected with any lesion of the mitral orifice. The lesions were those of intense aortic regurgitation. He had attributed the murmurs to the recoil of the blood upon the mitral leaflets, holding them tense against the stream of blood coming from the auricle. In the opinion of the late Dr. Flint, direct functional mitral murmurs were limited to a small number of cases of aortic regurgitation, but the author thought that functional mitral murmurs were not so rare. Obstructive functional murmurs are common in aortic regurgitation.

Pulmonary systolic murmurs are more frequent than any other form of cardiac murmurs. In examining one hundred consecutive cases, he had found in sixty-two systolic pulmonary-artery murmurs. In these the murmurs were present during tranquil breathing, or during respiration in such a way as to produce changes in the pulmonary circulation. If account is taken of the bruits heard in this region, the proportion becomes greater. Systolic pulmonary murmurs can be developed in the majority of healthy individuals, if we exclude those with thick chest-walls and those who are not intelligent enough to modify their breathing as directed. The author held that such a murmur was a dynamic obstructive valvular murmur, and is produced by the effect of changes of blood-pressure upon the semilunar valves. A certain degree of pressure in the artery must tend to prevent the opening of the valve. This causes a slanting position of the valve, and a narrowing of the orifice, with the production of a sonorous whirl. The fact that such murmurs are not more frequently developed at the aortic orifice is due to the greater power of the ventricle and the wider distribution of the systemic circulation. There are, however, cases in which increased arterial tension is expressed, not only by accentuation of the aortic second-

sound, but by an aortic systolic murmur. Pulmonary-artery murmurs, as heard in ordinary breathing, are confined to the expiratory act, and are loudest at the beginning of the act. The murmur is sometimes only heard with the first beat that occurs with expiration. In order to further develop this murmur, it is only necessary to arrest respiration. It is better to stop breathing during expiration, especially at the end of normal expiration. A full expiration makes the murmur louder. The speaker asked, Are we not justified in assuming that there is a safety-valve action in this attitude of the pulmonary valve, which, together with the leakage at the tricuspid orifice, tends to prevent engorgement of the lungs by retardation of the flow of blood in the systemic veins, so that, continued for a time, it does no harm? On reference to the murmurs of anæmia, the author thought that they were due to some disturbance of the valvular apparatus. In this condition there is a marked reduction in the quantity of blood. The valves require a certain amount of expansion of the vessels in order to allow them to apply themselves to the walls. Venous hums and basic murmurs he thought to be of valvular origin.

Dr. A. L. Loomis, of New York: Many different explanations of murmur within the heart-cavities have been given. We should recognize that they are due to many different causes.

The obstructive mitral murmurs referred to are, I think, of frequent occurrence in connection with aortic disease where there is dilatation and feebleness of heart-power, but on autopsy I have always found such changes in the mitral valves as seemed to me to account satisfactorily for the murmur heard.

I have heard the murmurs readily produced during respiration, but where these murmurs have been persistent I have always found conditions of anæmia and failure of the right heart. It seems to me that the explanation is either hæmic or failure of heart-power. I think that we shall, as we study the cases more, find that they are due, not so much to change in the valvular orifices, as to changes in the heart-cavity and in the heart-walls. Murmurs have come to be of very little pathological significance to me, unless there are other changes associated with them. The worst cases of heart disease that I have met with have had the simplest and least distinct heart-murmurs.

Dr. E. T. Bruen, of Philadelphia: In a case of anæmia which I have recently studied, the blood-corpuscles were reduced from the normal to 1,800,000, with a great reduction in the hæmoglobin. There was also great relaxation of the vascular system; so much so that, as the arm hung out of bed, there was a venous pulse at the back of the wrist. This was attributed by Dr. Osler and myself to relaxation of the capillary vessels to such an extent as to permit the systolic impulse of the left ventricle to force the blood through the capillaries into the veins. There was no venous pulse in the neck. In this case there were murmurs at each of the valves of the heart. As the anæmia improved and the crasis of the blood was restored the venous pulse disappeared and the murmurs gradually lessened, and the man has now no murmur whatever.

Dr. F. C. Shattuck, of Boston: A murmur, by itself, is next to nothing; there must be something besides the murmur to make it of much importance. The author has stated that in anæmia there is a reduction in the quantity of the blood. I would ask, Is not the reduction more in the quality—a corpuscular reduction, and a reduction in the capacity of the corpuscles for carrying hæmoglobin?

Dr. Samuel C. Chew, of Baltimore: With reference to the diagnosis between aortic regurgitant and mitral direct murmurs, I think that the diagnosis can usually be made by attention to the following points: An aortic diastolic murmur, although it may be intense at the apex, becomes manifestly louder as we reach the right side of the sternum, in the second intercostal space. It will then occupy the whole diastole. If the murmur is mitral in origin, it generally will be presystolic, and will be also heard in the scapular region. The aortic murmur is not apt to be heard in the latter situation.

Dr. Beverley Robinson, of New York: I have occasionally found in acute strain of the heart, not necessarily brought about by great muscular exertion, murmurs which unquestionably had nothing to do with organic changes in the heart, and cannot be explained as due to any special modification in the blood. The murmurs seemed to be due to more or less acute dilatation or obstruction of the mitral orifice.

Dr. Israel T. Dana, of Portland: I have had under my observation two sisters, one forty years of age and the other thirty-three. The mother died of organic heart disease. Both of these sisters have had a mitral regurgitant murmur. In the older sister the murmur, after remaining for five or six years, disappeared. It remained absent for one or two years and then returned, and has continued for the past two or three years. In the second case the murmur, after having been present for five or six years, disappeared, and has since remained absent.

A paper by Dr. Hosmer A. Johnson, of Chicago, on

PNEUMATIC DIFFERENTIATION,

was read by the Secretary, in the absence of the author.

The last paper of the morning session was entitled

METHODS OF LITERARY RESEARCH,

by Dr. John S. Billings, U.S.A. The author referred to the best way of using libraries, with especial reference to medical literary work. He also spoke of the great importance of carefully prepared catalogues of books.

Adjourned.

Afternoon Session.

Dr. H. C. Wood, of Philadelphia, read a paper entitled

THE ANTIPYRETIC TREATMENT OF FEVER.

The author had prepared certain propositions, which he read, and then gave what he thought to be the proof of their correctness. The first proposition was: "Fever is a disturbance of calorification in which, through the influence of the nervous system, heat-dissipation and heat-production are both affected. If there be a fever which is produced by the direct action of a poison independently of the nervous system, we have at present no proof of its existence." If an animal's temperature rise, there must be a certain number of heat-units used in producing that rise. If the temperature fall, there must be a corresponding lessened production of heat. In his experiments the agent used to produce the fever has been the pyrogenic principle found in ordinary commercial pepsin. After the substance has been introduced the animal is put into a calorimeter. The animals used in the experiments have been dogs. In the normal animal, heat-production and heat-dissipation are correlated functions. When the poison is injected it is found that heat-dissipation increases at the time that heat-production is diminishing, so that the fall of temperature was in part the result of heat-dissipation and in part the result of diminished heat-production. It is impossible that there should be this wide disturbance of these two functions simultaneously unless the poison which produces the fever acted upon some one central organ, and that must be the nervous system.

Second, "Heat-production is regulated by a nervous apparatus, our knowledge of which is still imperfect." There is certainly an inhibitory centre which depresses or controls the production of heat. It probably does this by acting upon the trophic cells of the gray matter of the spinal cord. It is possible, also, that there is a

centre which, when excited, increases tissue-change, but its existence has not yet been proved.

Third, "Heat-dissipation is regulated through the vaso-motor system, so that vaso-motor paralysis is followed by an enormous loss of animal heat, and, under unfavorable circumstances, by death from cold." If section of the cord is made in such a way as to get vaso-motor paralysis without destruction of the respiratory centres, the heat-dissipation rises enormously. If the animal is kept in a temperature of 50° or 60°, it dies in a few hours of progressive loss of heat. If kept in a warm chamber it lives for days. The cause of the rapid heat-dissipation is the opening of the blood-vessels of the surface of the body.

When these remarks are applied to a study of antipyretics, it is seen that drugs may lower bodily temperature in health or in fever by increasing heat-dissipation. In this way act all agencies which cause vaso-motor paralysis. Antipyretics acting in this way may be called false antipyretics. Then it is conceivable that there may be drugs which act on heat-production through the inhibitory nerve-apparatus, of which mention has been made. Such drugs may for convenience be called true antipyretics. Aconite, veratrum viride, and drugs of that class belong to the false antipyretics. Whether or not there are any true antipyretics has, until recently, been a question which we have been unable to answer. With regard to antipyrin, certain experiments made in the University of Pennsylvania seem to give some positive results. Care must be exercised in these experiments not to confound a normal defervescence with the action of the drug administered. In the dog the use of antipyrin diminishes both heat-production and heat-dissipation, the former being diminished more than the latter. It is probable that heat-production is primarily affected. The question arises whether this result is due to an effect on the circulation. He had found that antipyrin had no effect upon the circulation. The blood-pressure was uninfluenced by its administration. He therefore concluded that the action of antipyrin upon the bodily heat was entirely independent of any action upon the circulation, and the probabilities are, of course, that it acts through the nervous system. Beyond this our present knowledge does not extend.

THE TREATMENT OF TYPHOID FEVER BY ANTIPYRIN AND THALLIN

was the title of a paper by DR. FRANCIS MINOT, of Boston

The following conclusions were reached: 1. Both antipyrin and thallin have a remarkable power of reducing the temperature in typhoid fever. 2. In no case was the use of these refrigerants apparently followed by any unfavorable effect upon the course of the disease. 3. The general condition of the patient was more comfortable after taking antipyrin and thallin, which were often followed by sleep. 4. The refrigerant medication by antipyrin and thallin appears to have no specific or decided effect upon the course or issue of typhoid fever. It often contributes much to the patient's comfort; perhaps indirectly promotes his safety. 5. The effect of antipyrin and thallin in promptly lowering the temperature shows that the danger in typhoid fever does not consist in high temperature alone, and that the latter is rather an index of the violence of the abnormal condition which we call fever, though perhaps adding somewhat to the danger. 6. By the internal use of antipyrin and thallin all the effects which are claimed for the treatment of typhoid fever by the cold bath are readily obtained without the trouble and inconvenience of the latter method, and without exposing the patient to the dangers of exhaustion and shock consequent on the fatigue of removal from bed. 7. These remedies may be given without danger to the youngest patients in suitable doses, and, indeed, their beneficial effects are more decided and the unfavorable consequences are less observable than with adults.

DR. I. E. ATKINSON, of Baltimore As regards the relative merits of thallin, antipyrin, and antifebrin, I think that the tendency to chilling after the use of thallin is decidedly greater than after the use of antipyrin, while the latter is more apt to produce nausea and vomiting. I am disposed to disagree with the statement that the use of these drugs can take the place of the external application of cold water. It has recently been reported that one observer abroad has treated two hundred cases in private practice by the use of baths with a mortality of nothing; in army hospitals he has had a mortality of five per cent., and in ordinary hospital practice a mortality of less than eight per cent. Although with antipyretics we can reduce the temperature at pleasure, yet the duration of the case is not lessened, and in some cases it has been thought to have been prolonged.

DR. GEORGE L. PEABODY, of New York: I have found that certain cases which do not bear the cold bath will bear the use of antipyretic drugs, while, on the other hand, the bath may be used in a certain number of cases in which antipyretics cannot be applied. From clinical experience I have been convinced that the cold bath accomplishes more than the simple reduction of temperature. Its soothing effect upon the nervous system is greater than that accomplished by the reduction of temperature by antipyretic drugs. I believe that in many instances the course of the disease is favorably modified by the use of the cold bath. Another important matter is, that since the introduction of these methods of antipyresis the number of relapses seem to be greater and more fatal. I understood Dr. Wood to say that antipyrin acted solely by diminishing heat-production, and that it did not increase heat-dissipation. I must differ from him on that point. It seems to me that the increase of heat-radiation from the surface is very great, not only where it produces sweating, but also where it does not.

DR. W. W. WELCH, of Baltimore: There is comparatively little evidence that the grave symptoms of fever are referable to the elevation of temperature. There is no doubt that temperatures of 110° to 113° produce serious symptoms, but whether or not ordinary temperatures of 105° to 107° exert any serious action on the body, is a question which is certainly unsettled. It has been shown that rabbits can be kept in a box, with a continuous rectal temperature of 107°, for at least two weeks, provided the precaution is taken to keep the box well ventilated and the animals supplied with moist food. Patients may have a perfectly clear brain and no grave symptoms with a temperature of 106° or 107°. On the other hand, there are severe and fatal cases of typhoid fever in which the temperature has never registered a great height. While in most cases there is a certain proportion between the height of the temperature and the severity of the disease, yet there are certain cases where this proportion does not exist.

DR. WILLIAM PEPPER, of Philadelphia: I have been disposed to think that antipyrin and antifebrin were superior to thallin. I have not seen any of the dangerous symptoms which have been mentioned by some writers. The action of these drugs seems to be purely through the nervous system. I have seen no effect upon the circulation, upon the respiration, or upon the secretions, save that of the skin. Some of my observations have been of interest with reference to the relative value of the external use of cold water and the internal use of antipyretics. In the sudden acute pneumonias of children, with a temperature of 106° or 107°, with initial convulsions, where the prompt and repeated use of cold baths has been without gratifying results, full doses of either of these antipyretics have produced a remarkably successful effect. In a recent case, in a child with double croupous pneumonia, involving two-thirds of the left lung and one-third of the right lung, with a temperature in the rectum of 107°, and with repeated convulsions, cold baths failed to relieve the symptoms, although repeated at intervals of three hours. Antipyrin in repeated

doses controlled the pyrexia at the beginning and on several occasions during the course of the disease, and after a severe struggle the child recovered. As to the ability of these agents to replace cold baths under all circumstances, the evidence is not adequate. In the sudden hyperpyrexia occurring in the course of rheumatism, I am not prepared to accept the view that these drugs are capable of replacing the cold bath. In these cases we have direct evidence that the high temperature is the cause of the symptoms—at least of the severe nervous symptoms.

Dr. George B. Shattuck, of Boston: It seems to me that antifebrin offers all the advantages of antipyrin, without its disadvantages. It has none of the disadvantages which belong to thallin. Three or four grains of antifebrin accomplishes the same results as are produced by a larger dose of the other drugs. The disagreeable symptoms which some writers have referred to as following antipyrin are probably due to the fact that they follow the original recommendation, and give two grammes of the drug. The same benefit can often be obtained from one gramme and often from seven grains. With reference to the point suggested by Dr. Welch, I would say that, whether pyrexia is or is not a dangerous feature of the disease, we find, clinically, that where a patient has high fever, is irritable, impatient, and uncomfortable, the administration of one of these antipyretics or the external use of cold water produces a tranquil and refreshing sleep, and the patient awakes in a condition much better to continue the struggle with the disease.

Dr. J. C. Wilson, of Philadelphia: A recent observation which I have made is interesting as bearing on the question of heat-dissipation. I have lately been treating a case of typhoid fever in which from time to time antifebrin in five-grain doses was given. These were repeated whenever the temperature reached 104°. This caused copious sweating, with the usual reduction of temperature, amounting to three and one-half or four degrees. On the last occasion one ninety-sixth of a grain of sulphate of atropia was given with the antifebrin. No sweating occurred, and the temperature was reduced one and one-half degrees.

Dr. James T. Whittaker, of Cincinnati: I would differ from the gentlemen who seem to accept the view that fever is a neurosis. We have, I think, no proof that the nerve-centres are distinctly irritated, and we have no proof that the agents which reduce fever act directly on the nervous centres. Is it not more probable that the antipyretic action is really an antimicrotic action? We have some observations which go to show that the disease is caused by bacteria, or, if not directly by bacteria, by some of their products—the ptomaines. Would it not be more rational to study the habits of these bacteria and address ourselves rather to the removal of the cause than to the counteracting of the effects?

Dr. H. M. Lyman, of Chicago: I am disposed to regard their great value as proceeding not so much from their power to reduce temperature as from their general effect, especially upon the nervous system. I regard them as valuable adjuvants in the treatment of disease, largely from their hypnotic and tranquillizing effect upon the nervous system, to which allusion has already been made. I have observed that in many instances where, in abrupt febrile affections, relief has not been secured from antifebrin and antipyrin this failure is frequently due to the presence of the condition we call rheumatic, and there salicylic acid gives the relief that we fail to get with the antipyretics.

Dr. John Guiteras, of Charleston: I have had some experience with these drugs in the treatment of the continued fevers of warm climates, but here the results have been rather negative, and have shown the advantage of stopping their use after they have been continued for a certain length of time. I have been called in consultation where the drug had been continued for ten or fifteen days, each time that it was given producing a certain reduction of the temperature, but having no permanent benefit, and the patients have begun to improve as soon as the drug was stopped. The effect of cold-water baths in these continued fevers of the South has seemed to me to be more beneficial. If continued for two or three days they often favorably modify the course of the disease.

Dr. George L. Peabody, of New York: There is no question in my mind that a considerable proportion of cases of typhoid fever can be aborted by antiseptic treatment of the intestinal ulcers with naphthalin or resorcin. For the past two years I have treated all cases coming under observation during the first ten days of the disease with a calomel purge (ten grs.) followed by naphthalin in such doses that at least seventy or eighty grains are taken during the twenty-four hours. Under this treatment I have without doubt succeeded in aborting many cases in which the symptoms were quite pronounced. I have not succeeded in cases coming under observation at the end of the second week.

Dr. H. C. Wood, of Philadelphia: In regard to the dissipation of heat by sweating, I would state that in the dog, on which the experiments were made, there are but few sweat-glands. Sweating in man does undoubtedly cause a dissipation of heat.

Dr. James Tyson, of Philadelphia: In a recent case of rheumatism the temperature suddenly went up to 105°, with alarming brain-symptoms. Antifebrin, in five-grain doses, failed to produce any effect. The patient was then put into a cold bath, and the temperature of the water gradually reduced to 72°. The discomfort experienced by the patient then prompted his removal from the bath. The thermometer in the rectum showed a reduction of only one-half of a degree, but within the course of half an hour the temperature fell three degrees. I scarcely think that this was a natural defervescence, but must attribute it to the effect of the bath. The fall in temperature was followed by a disappearance of all the symptoms, and the recovery of the patient.

Dr. R. Palmer Howard, of Montreal: I want to emphasize the fact that internal antipyretics and the cold bath are not equivalents—they are substitutes—and important auxiliaries to the physician. These measures relieve special symptoms, but whether or not they shorten the duration of the disease is a question not yet settled. Another important point is with reference to relapse in typhoid fever. This is a subject which requires investigation. I think that every relapse, so called, is due to the absorption of fresh poison. It is really a fresh attack. It is really an initial attack. It runs a severe course, and often proves fatal.

Dr. Henry Hun, of Albany, reported in detail the histories of twenty-nine

CASES OF SEWER GAS POISONING

coming under his observation, in which various diseases appeared to have been due to the inhalation of sewer-gas. He thought it probable that the following diseases may result from sewer-gas poisoning: Vomiting and purging, separately or combined; general debility, fever, sore-throat of a diphtheritic type, neuralgia, and perhaps, also, myelitis of the anterior horns. These conditions are frequently combined. Fever is frequently associated with the other symptoms. There is one group of symptoms which is almost always present—that is, loss of appetite, extreme prostration, and pain in the head. When this occurs as a chronic condition we are justified in suspecting that the patient is suffering from sewer-gas poisoning.

Dr. Israel T. Dana, of Portland, Me., reported the following

CASE OF ANEURISM ON THE ABDOMINAL AORTA.

A. H——, a man aged thirty, of previous robust health, was found, August 6, 1886, emaciated, feeble, anæmic,

dyspeptic, and with very frequent, unsteady, and irregular pulse. The most prominent symptom was a constant sensation of throbbing and pulsation centring in the epigastrium. Exacerbations occurred on slight exertion or excitement.

In August, 1884, he fell ten feet, striking on small of back. Gradual failure of strength and endurance appeared. He would get tired soon, and more easily out of breath. There was gradual deterioration of health until, in latter part of June, 1886, he was utterly incapacitated from all labor. Exploration of abdomen anteriorly revealed existence of a small squabby incapsuled tumor just above the level of the umbilicus. Single impulse related to cardiac systole; no back-stroke; distinct blowing sound. On examination posteriorly there was found a distinct independent centre of motion and sound. The sound was double, sharper and more intense than that heard in præcordial region, and possessed a well-marked "booming" quality. Between this centre of sound and the lower left interscapular region, where the normal heart-sounds could be faintly heard, there intervened an area of silence.

The diagnosis was small traumatic aneurism of abdominal aorta, just after its passage through diaphragm; also some inflammation of aortic coats higher up.

The treatment consisted of (1) absolute rest in bed for two months; (2) restricted diet of bread, meat, milk, and cocoa, with amount limited; (3) iodide of potassium, twenty grains four times a day.

Immediate improvement ensued within first week, and continued gain in power, till by the middle of November he could walk and ride about carefully.

On May 9, 1887, he began light work at the paper-mills again.

He had regained the twenty-five pounds of lost weight, ate well, slept well, and had but little palpitation, though excitement, physical or emotional, readily induced slight return of some of the old sensations.

Physical examination at this date revealed anteriorly the existence of the aneurismal mass, perhaps a little diminished in size, while the blowing sound was scarcely audible. The impulse and expansion were markedly reduced. On examination posteriorly the independent centre of pulsation and double sound was found, but both motion and sound were greatly reduced in amount and the booming quality was gone.

It was concluded that a practical cure had taken place, the sac having become largely filled up with concentric layers of fibrin, and that reduction of the existing inflammation of aortic coats higher up had been effected.

The chances of final complete recovery were not considered encouraging. The circumstances of the patient were not favorable to such rest and tranquillity of mind as might be desirable, and even with all external conditions at the best, there would yet be too many dangerous liabilities remaining, such as embolism, pyæmia, atheromatous degeneration, etc. The quick improvement under treatment was noticeable. The patient himself attached great value to the iodide of potassium, which he still takes, feeling so much better while taking it that he is unwilling to leave it off.

Evening Session.

A discussion on

HEMORRHAGIC INFARCTION

was opened by Dr. W. W. Welch, of Baltimore, referee.

The author presented as the result of his studies the following conclusions: 1. The blood which produces hemorrhagic infarctions comes chiefly, if not exclusively, from the collateral vessels. 2. Hemorrhagic infarctions in the intestine cannot take place merely from a reflux of blood from the veins. 3. The blood-pressure is very low in the region where hemorrhagic infarction occurs, in consequence of occlusion of the main artery. 4. A certain degree of force of the collateral circulation is required to produce a hemorrhagic infarction. 5. No positive proof exists that a change in the vascular walls is essential to the production of a hemorrhagic infarction. 6. The hemorrhage occurs by diapedesis. 7. Where hemorrhagic infarction has taken place, the large and small veins are widely dilated with blood and the arteries contain a smaller quantity of blood than normal; there is stasis in many of the veins and capillaries.

Dr. William Osler, of Philadelphia, the conferee, referred to the clinical aspects of the subject, and reported the following case: J. M——, aged twenty, admitted to the Philadelphia Hospital on October 10, 1886. He had never had syphilis, and was a healthy-looking man. He presented a clear history of typhoid fever, with a sickness of six weeks two years previously. His present illness began with diarrhœa one week before admission. For two days he had attacks of bleeding at the nose. There was a temperature of 102°, with pain in the abdomen. There was no cardiac murmur, and examination of the lungs gave negative results. The splenic dulness was increased. By October 15th the temperature had reached 103°. There was almost constant delirium. There was some diarrhœa. Coldness of the feet appeared, and continued to increase in degree and extended up the leg. The legs became livid, and no pulsation could be detected in the femoral and popliteal vessels. The patient died on the 17th. It was supposed that there was thrombosis of the iliac veins, with gangrene of the legs, which is one of the rare sequences of typhoid fever. At the autopsy it was found that the lower portion of the abdominal aorta, and also the two iliac arteries, were plugged with thrombi. There was general peritonitis; the right kidney presented a red-brown infarction. There were no ulcerations in the bowels, no endocarditis. The lungs were normal. There was an infarction in the spleen. During life the blood was examined for microbes, but none were found. After death microbes were found in the spleen.

Hemorrhagic infarctions of the liver, under ordinary circumstances, are impossible. A. B——, a hard drinker, was admitted to the hospital on September 27th. His illness began in the previous June, with vomiting and swelling of the abdomen. The dropsy steadily increased. He died two days after admission. At the autopsy a large amount of fluid was found in the peritoneal cavity. There was nothing special found in the heart or lungs. The liver was remarkably cirrhotic. Through the right half of the right lobe there were scattered numerous reddish-brown areas. The walls of the portal vein were thickened, and a large brown thrombus occupied the upper portion of its trunk. The branches passing to the right lobe were filled with clots. The hepatic artery and vein were normal. In this case the hemorrhagic infarctions were in all probability due to the cirrhosis of the liver, which had caused more or less obstruction of the branches of the hepatic artery. The only other case of infarction of the liver which the speaker had been able to find was one reported by Recklinghausen.

In the intestine hemorrhagic infarctions are met with in two forms, one involving the mucosa, the other affecting the entire gut. The former not infrequently ends in ulcerative necrosis. The latter form of hemorrhagic infarction is not common in man. In the horse it is frequently seen resulting from thrombi formed from verminous aneurisms of the mesenteric and its branches. This is a common cause of the severe and fatal colic so frequently seen in these animals. In conclusion, the speaker referred to the fact that in the lung it was not uncommon to have a vessel blocked without the production of an infarction. An occasional cause of thrombotic infarction is local disease of the pulmonary artery. It sometimes results from the endarteritis induced by beginning tubercular processes.

Adjourned.

(To be continued.)

THE PRACTITIONERS' SOCIETY OF NEW YORK.

Stated Meeting, May 6, 1887.

GEORGE F. SHRADY, M.D., PRESIDENT, IN THE CHAIR.

DR. CLEMENT CLEVELAND exhibited a

SELF-RETAINING SPECULUM,

and demonstrated its use upon a patient. It consisted of two blades like that of the ordinary Sims speculum, each having a flange, and connected by a bar one inch and a half long. The space made by this connecting-bar was sufficient to include the tissues between the posterior wall of the vagina and the integument between the nates. To be used with the speculum was a belt which went around the body, and from it a strap passed through a slot at the end of the blade, back under a bar soldered to the connecting-bar, and then it returned upon itself and was hooked, so as to produce the required degree of tension to hold the instrument in position without the aid of an assistant.

DR. SAMUEL SEXTON then read a paper [see p. 649] entitled

BOXING THE EAR.

DR. JAMES B. HUNTER then reported cases in which he had used

AVELOZ IN THE TREATMENT OF CANCER.

The milk of aveloz, a specimen of which was shown, is the product of a plant growing in Brazil, one of the euphorbiaceæ, many varieties of which are well known for their irritant and acrid juices. He had not been able, from any botanical works at his disposal, to ascertain exactly the position of the plant furnishing the juice known as the milk of aveloz, but it appeared to be closely allied to the *Hura crepitans*, the milk of which is described by the older botanists as possessing extraordinary properties as an irritant. Boussingault made an examination of some of the juice, and was attacked, he says, with a severe form of erysipelas. The courier who brought the juice, as well as the inhabitants of the house in which he spent the night on his way, were also attacked with severe inflammation of the skin. Another species of the same family growing in Brazil is the *Hippomane mancinella*, or manchineel tree, about which there are fabulous accounts, as that it is fatal to life to sleep beneath its shade. It is true, however, that a drop of the juice of that tree applied to the skin will quickly raise a blister full of serum. It is not surprising, therefore, that the milk of one of the euphorbia family should be possessed of very active properties.

Several years ago a small quantity of the milk of aveloz was sent from Brazil to the authorities at Washington, and distributed for trial. Then for a time none could be obtained. Later it was to be purchased of a gentleman in this city, John T. Kirby, 16 Beaver Street. The depôt for its sale is in Pernambuco, the juice being collected chiefly in the province of that name. The preparation is said to be patented by the Government of Brazil, and its use is endorsed by the Central Board of Health of Rio de Janeiro.

IT HAS A LOCAL REPUTATION FOR THE CURE OF ULCERS OF ALL KINDS,

especially syphilitic ulcers, and for the cure or relief of cancer. It is claimed by Numa Pompilio, who signs himself Surgeon-Dentist, and who seems to act as agent for Gitirana Costa, who prepares the drug, that it is used extensively in the Pedro II. Hospital in Rio, and with excellent results.

Two preparations are furnished, one of which is recommended for open ulcers, and the other for cases of cancer in its early stages. The principal or only appreciable difference appears to be in the degree of inspissation.

The method of using the drug advised is, that the affected surface be thoroughly cleaned with a carbolic lotion, and dried. The juice is then applied freely with a soft brush, retained in place by lint or cotton, and covered with light rubber or gutta-percha tissue. The purpose of the application is to produce the effect of a caustic. Special care is necessary to prevent contact with sound tissues, as it is extremely irritating. The application is repeated every three or six days, according to the condition. His own experience had been confined to cases of epithelioma of the cervix. He first alluded briefly to the experience of others. Its application to disease of the breast is said to be very painful. There is not usually much pain in its use on the cervix uteri.

Dr. Velloso, in the *British Medical Journal*, January 6, 1887, claimed to have cured several cases of epithelioma of the face and lips, in which site the drug was said to cause severe pain.

Dr. W. H. Bolling, of Louisville, who received some of the first specimens of the remedy sent to Washington, reported marked improvement in several cases of epithelioma of the face; and one case of probable or apparent cure. It was used in Dr. Bolling's cases as an escharotic, for the destruction of diseased tissue.

Dr. Janvrin, of this city, had used the drug in many cases with marked benefit.

During the past three years Dr. Hunter had applied the milk of aveloz in many cases of

EPITHELIOMA OF THE CERVIX,

and though its effect had often been negative, in a certain number it had produced results that he had not obtained by any other means. In cases of spongy, easily disintegrated cervices, it had left a better surface than nitric or chromic acids, or than the actual cautery. It had also seemed to him that the recurrence was delayed longer than after the ordinary caustics. He had confined its use to cases where the knife was not applicable, or where operation was not allowed. In some cases he had been surprised at the comparatively healthy condition of the surface remaining after the eschar came away, and surprised also at the long interval that elapsed before there was fresh breaking down.

One of the effects of a free application of the juice to a diseased surface is to promote a copious serous discharge, thus depleting the congested vessels. In some cases a marked difference has been effected in the character of the discharge, which has become and remained for a long time almost inoffensive.

The following cases were selected as illustrative of the treatment and exemplifying its results, of which all that could be said was, that they were in some respects better, as to the arrest of the disease, and as to the comfort of the patients during its progress, than those afforded by many of the usual methods. As far as he could judge at present, he should not use the aveloz with any expectation of effecting a cure; but it seems probable that it may do more than some other remedies toward arresting the progress of the disease, and perhaps prolonging the period during which surgical treatment may be employed with some hope or promise of success.

He had not lost sight of the fact that some cases of cancer of the uterus undergo changes in their progress that might erroneously be attributed to the remedies used; but after making due allowance for that source of error, there still remains something to be said in favor of the drug in question.

CASE I.—Mrs. A——, aged thirty-nine, mother of four children, had been in good health until one year before seen, when there was a profuse watery discharge, very offensive, with occasional hemorrhages. The aveloz was applied at first every third day, and later once a week. There was marked improvement for seven months; the disease seemed almost to stand still.

THE APPLICATIONS WERE FOLLOWED BY SOME PAIN,

but the discharge very much diminished, and became less offensive. The patient died about one year after she was first seen.

CASE II.—Mrs. B——, aged forty-one, mother of two children, had amputation of the cervix, with recurrence six months later. There was a profuse offensive discharge, and the surface bled on the slightest touch. The aveloz was used so freely as to destroy the tissue deeply. The result was such as to rouse a suspicion as to an error in diagnosis. The improvement was of nearly a year's duration. In this case nitric and chromic acids had been used without benefit.

CASE III.—Mrs. C——, aged fifty, mother of four children. The use of aveloz seemed to arrest the breaking down of the cervical tissue. For eighteen months there was no material change. Then there was a sudden redevelopment. No opportunity was afforded of a further trial of the drug. The long period of freedom from all the urgent symptoms was a remarkable feature in the case.

CASE IV.—Mrs. D——, aged fifty-five, had, when first seen, been suffering from hemorrhages, and a very offensive discharge, for about six months. After using the aveloz there was less hemorrhage, but the offensive discharge continued. There was a change in the appearance of the diseased portion of the cervix, and it could be touched without bleeding as at first. The use of the aveloz was suspended several times, and each time there was an aggravation of the symptoms, and after its use the diseased surface could be examined more thoroughly without breaking down. In this case the patient had suffered the constitutional effects of the disease before coming under treatment, and little was to be expected from any local application.

CASE V.—Mrs. E——, aged fifty, mother of three children, had enjoyed exceptionally good health until one year before the time when first seen, October, 1886. She had been told she had a cancer, and was prepared for the worst. After three applications of the aveloz a slough came away, and for the past six months there has been no apparent change in the condition. The surface remains unbroken, and there is no evidence of extension in any direction. Repeated applications have been made, but the first apparently did the most good, as there has been no discharge and no hemorrhage since they were made. The case is still, and will be watched with interest.

The class of cases in which this drug seems at least worthy of a trial are those where the skin or mucous surface is broken—that is, in the early stage of ulceration, and before there are any constitutional symptoms.

DR. ROBERT F. WEIR then read a paper [see p. 652] on

PERFORATION OF THE APPENDIX VERMIFORMIS, WITH A PLEA FOR EARLY RESORT TO SURGICAL INTERFERENCE.

DR. W. T. BULL thought that the Society was under obligation to Dr. Weir for bringing this most important subject before it. So far as the performance of laparotomy for this variety of perforation was concerned, he thought that the record, at the present time, was not very satisfactory, but at the same time it was encouraging. He noticed that Dr. Weir had thrown Homan's case out, and it was very proper that he should have done so, because it seemed evident that the abscess could have been opened without involving the peritoneal cavity at all. Even though one did not feel certain of his diagnosis, he believed that a limited exploration could be practised with very much less danger than what is ordinarily called a complete laparotomy. Given a doubtful case, one might, even without an anæsthetic other than cocaine, make a small incision which would permit the introduction of one or two fingers, and by the exploration that could be done through such an opening he thought that, on the average subject, not too fat, a correct diagnosis could be made, or at least it could be determined whether or not the disease was connected with parts in the right iliac fossa. Such an operation could be resorted to very much earlier than an ordinary complete laparotomy.

So far as the general management of the case was concerned, Dr. Bull thought that thorough washing out of the abdominal cavity was very desirable, but at the same time he confessed that he felt somewhat skeptical with regard to the reports of laparotomists who claim to cure general purulent peritonitis by any kind of irrigation. He doubted whether general purulent peritonitis had ever been cured by that method. He was unable to see how anyone could

WASH OUT THE ABDOMINAL CAVITY

and remove all the purulent and other inflammatory products. He could not help believing that the reported cases of cure had been cases of localized peritonitis. Such cases can be cured by irrigation, perhaps. He believed that surgeons were fast coming up to the point where they would have a much better chance for reversing the mortality record in these cases, providing that physicians watch with the greatest amount of care the development of the symptoms. He would like to ask Dr. Weir if he was thoroughly satisfied that he would not have been likely to have cured his patient by such an exploration for perityphlitic abscess.

DR. WEIR said that he should probably have struck the abscess, and probably would have given the patient a better chance than was afforded by his operation.

DR. A. H. SMITH asked, why advocate laparotomy in the median line? Why not make the incision in the region of the cæcum?

DR. WEIR replied that there was no difference in the risk, probably, between the two regions, but the chances were that in some cases the incision in the median line would prove to be the one through which the pus could be reached.

DR. SMITH referred to a case in which stercoraceous vomiting was present to a very marked degree, yet there was no intestinal obstruction. The case was one of probable ingestion of corrosive sublimate. The odor of the vomited matter was distinctly fecal and not gangrenous.

DR. A. A. SMITH asked Dr. Weir what he meant by the expression "very early?"

DR. WEIR replied that he could not fix the time absolutely, but that certainly the

EXPLORATORY INCISION SHOULD BE MADE BEFORE THE END OF FORTY-EIGHT HOURS.

DR. SMITH said: Suppose there is no localized peritonitis, will the exploratory incision do harm?

DR. WEIR answered that the exploratory incision was comparatively harmless when inflammation was not present. He was unable to say how much, if any, would be added to the danger by the operation.

DR. SMITH asked if there were not many cases in which recovery took place without an operation. He did not wish to be regarded as unduly critical, but was merely desirous to obtain information which would enable him to do the best for the patient when brought face to face with a serious case, and particularly as to when abdominal section should be advised. He was of the opinion that

IT SHOULD BE DONE VERY EARLY,

and he wished to ascertain particularly how much the gravity of the case would be increased by an operation within the first forty-eight hours.

DR. WEIR said that cases did occur in which recovery took place without any operation. As to the danger added by an early exploratory incision, he could only refer to cases in which it had been performed without any ill effects; for example, Billroth had opened the abdomen in twenty-seven cases, and all the patients recovered.

DR. SMITH: And if there is no inflammation the operation is less harmful?

Dr. Weir: It is a comparatively safe procedure. Whether it adds to the inflammation already in progress he was unable to say.

Dr. A. H. Smith referred to the case of a woman under observation, who had, at about the middle of Poupart's ligament, a tender spot with some pain on moving, and some sense of resistance on palpation. There was no rise of temperature, and no great amount of suffering, and yet there was a slight swelling and resistance there which were not present upon the opposite side. Was the indication present for an operation?

Dr. Weir said it must be remembered that perityphlitis in females was exceptional; it was the rule that it occurred in males. And there were so many other causes of inflammatory troubles in that locality in females that he thought such a case could be watched safely. It was

THE SEVERE CASE PROGRESSING

with marked symptoms which he had under consideration, and when it was ascertained that pus was present it should be let out.

The Society then went into executive session.

AMERICAN LARYNGOLOGICAL ASSOCIATION.

Ninth Annual Congress, held in New York, May 26, 27, and 28, 1887.

(Concluded from page 648.)

Friday, May 27th—Second Day—Morning Session.

The Association was called to order by the President.

The first paper was an elaborate one, read by Dr. Frank Donaldson, Jr., of Baltimore, entitled,

FURTHER RESEARCHES UPON THE FUNCTION OF THE RECURRENT LARYNGEAL NERVE,

in which he reviewed warmly a paper read before the Association by Dr. F. H. Hooper, of Boston, at a former meeting, and then reported the results of a series of experiments performed in the biological laboratory of the Johns Hopkins University to prove that Dr. Hooper's criticisms upon his paper were not well founded.

Dr. Franklin H. Hooper, of Boston, then read a valuable paper on

THE ANATOMY AND PHYSIOLOGY OF THE RECURRENT LARYNGEAL NERVE,

in which was detailed a series of experiments performed in the physiological laboratory of the Harvard Medical School.

These papers were discussed by Drs. J. H. Hartman and J. N. Mackenzie, of Baltimore; F. I. Knight and S. W. Langmaid, of Boston; B. F. Westbrook, of Brooklyn, on invitation by M. A. Starr, of New York, and by the writers.

Afternoon Session.

The first paper was read by Dr. W. C. Glasgow, of St. Louis, on certain

MEASURES FOR THE RELIEF OF CONGESTIVE HEADACHES.

The variety of headaches considered in the paper was that from over-distention of the blood-vessels; the so-called brow or catarrhal headache occurring frequently at the menstrual period and called uterine headache, etc. The cavernous bodies are in a state of tension, and the measure for the relief of the pain which he had practised with most satisfactory results during the last four years was local abstraction of blood, by pricking these bodies with a lance-headed probe. The quantity of blood drawn rarely exceeded one ounce, and in some cases a single drachm gave the desired relief. The bleeding might be repeated.

Dr. J. N. Mackenzie, of Baltimore, had had a similar experience, and was pleased to hear that his view concerning the congested condition of the cavernous bodies during menstruation had been noticed by Dr. Glasgow.

Dr. C. C. Rice, of New York, said his experience had differed from Dr. Glasgow's; that he had regarded the cause as hypertrophic changes producing pressure; and that his treatment had been mainly by the use of the galvano-cautery, and he had not found it necessary to draw blood.

Dr. H. Allen, of Philadelphia, regarded these cases as owing to pressure effect due chiefly to deflected septum.

Dr. Sajous, of Philadelphia, while he thought that Dr. Allen's theory would explain a number of cases, believed that headaches originating in the nasal cavity were due to hyperæsthesia of the mucous membrane.

Dr. Bosworth, of New York, questioned very seriously that the point of contact of the mucous membrane in the nasal cavity was a pathological condition.

As to what the special morbid lesion was that produced headache, he thought we were yet very far from knowing exactly.

The discussion was continued by Dr. Allen and by Dr. Glasgow, who said that it was *congestion*, not hypertrophy nor hyperæsthesia, that constituted the basis of his paper, and that the condition of the cavernous bodies was evidence of the congestion above. He spoke only of the condition dependent upon those elastic sanguineous swellings which yielded to gentle pressure with a probe.

LEUCOPLAKIA BUCCALIS,

by Dr. Glasgow, of St. Louis, was read by title.

THE TREATMENT OF LARYNGITIS IN PROFESSIONALS WHO ARE UNABLE TO REST.

Dr. Solis-Cohen, of Philadelphia, opened the discussion on this subject, and said that he had been unable to treat laryngitis better in professionals than in other people. For the relief of acute hoarseness, he had used a brisk emetic, allowing the patient to rest until the performance begins, in the meantime not using the voice, but sucking pieces of ice, and applying cold compresses to the neck.

In cases of chronic laryngitis, he uses weak solution of zinc, gr. ii. to the ℥i., as a spray. In the intervals of the play it was well to allow the person to inhale the compound tincture of benzoin. Other remedies which could be used with benefit are turpentine, terebene, eucalyptol, etc., as inhalations. He was not aware of any special method adapted to this class of cases.

Dr. De Blois, of Boston, had found that these patients did not recover without rest. If able to spare twelve hours, very excellent results would follow the use of nitrate of silver, and disastrous results followed the use of cocaine.

Dr. Beverley Robinson, of New York, believed, so far as acute cases were concerned, that there were milder, and equally efficient, measures than emetics. He uses internally triturate tablets of chloride of ammonium repeated every fifteen or twenty minutes, with local applications of carbolized spray, modified Dobell's solution, two, three, or four times a day.

As to the chronic forms, he had used locally the tincture of iron with glycerine, and had not seen any special benefit from the use of internal remedies. The use of the faradic current twice a day had also been serviceable.

Dr. Bosworth, of New York, did not believe that there was any such thing as laryngitis; the seat of the disease was in the nasal passages. Eliminate the cold in the head with cocaine, and thin the membrane down with chromic acid, and the disease of the larynx would take care of itself. He had not seen any reaction follow the use of cocaine, and he had used it by adding twelve

grains to sufficient zero (fluid) cosmoline to dissolve it, and use as a spray with a hand-atomizer every hour or two hours, and at the same time inhale it by the mouth.

Dr. Robinson said that what Dr. Bosworth had stated concerning cocaine was incorrect, and also that laryngitis does occur independent of nasal troubles.

Dr. Sajous, of Philadelphia, said that, certainly and most emphatically, the action of cocaine in the larynx was pernicious. He has found that sprays in these cases were rather irritating, and contents himself with the internal use of one grain of quinine with one-fourth of a grain of nux vomica, repeated, perhaps, every two hours. The faradic current also was beneficial. Coca wine also was advantageous.

Dr. Glasgow, of St. Louis, had cured laryngitis without touching the nose. In acute cases, those in which the person *must* perform, he makes an application to the *larynx* of carbolized iodine, which relieves the congestion and gives power to the vocal cords.

Dr. Rice, of New York, thought well of the use of cocaine and cosmoline, but believed that it was the cosmoline which did the work. He had had better results with vaseline than he had had with astringents.

Dr. Asch, of New York, had found muriate of ammonia to be one of the most useful of internal remedies. He thought it could be best employed in solution with compound licorice mixture. This, with soothing inhalations and the use of ordinary remedies, barring emetics, will quickly afford relief.

In the chronic cases it is almost impossible to effect a cure, and local remedies must be used. Astringents had served him best, and his favorite was the perchloride of iron, thirty to sixty grains to the ounce of water, and applied with the brush. In most opera singers there was some hepatic disturbance which needed attention.

Dr. Hooper, of Boston, spoke of a class of cases in which the voice was altered simply from over-exertion, and in which electricity externally, and the internal use of aromatic spirits of ammonia, thirty or forty drops in a tumbler of water, gave excellent results.

Dr. Mackenzie, of Baltimore, cautioned against the injudicious use of cocaine in disease of the nose and throat. He never used it just before the person was to go upon the stage. In the larynx its effect was something terrible, second only to hanging.

Dr. Westerbrook, of Brooklyn, spoke of derangements of the digestive apparatus which predisposed to the troublesome conditions under consideration, and favored the use of an emetic, or calomel and jalap, to be followed by the mineral acids in small doses frequently repeated. He did not favor the use of cocaine.

Dr. Langmaid, of Boston, thought it should be easy for anyone to cure this class of patients, with so many remedies recommended as very excellent; but as for himself he had not found them easy to cure.

Dr. C. C. Rice, of New York, then read a paper on

GLANDULAR AND CONNECTIVE-TISSUE HYPERTROPHIES OF THE LATERAL WALLS OF THE PHARYNX,

in which he directed attention especially to the different pathological conditions.

Dr. Charles H. Knight, of New York, read a paper entitled

THE GALVANO-CAUTERY IN THE TREATMENT OF HYPERTROPHIED TONSILS.

He had punctured the tonsils in two or three places at each sitting, and with five or six séances had had very satisfactory results. It was especially applicable to the cases in which a hemorrhagic diathesis was present.

The paper was discussed by Drs. Sajous, of Philadelphia; French, of Brooklyn; MacCoy, of Philadelphia; B. Robinson, of New York; Ingals, of Chicago; Rice, of New York; Allen, of Philadelphia; Delavan, of New York; J. Solis-Cohen, of Philadelphia; and Asch, of New York. The discussion was largely on the occurrence of hemorrhage in tonsillitis, and it followed the usual course, namely, some fearing its occurrence, others regarding its occurrence as rare; some looking upon the operation as an exceedingly simple one, and others as one of a great deal of importance. About the same difference of opinion was expressed concerning the utility of the galvano-cautery.

Dr. Beverley Robinson, of New York, gave a

NOTE ON A FREQUENT CAUSE OF NASAL HEMORRHAGE.

Ulcerations in atrophic rhinitis, according to his experience, were one of the most frequent causes of nasal hemorrhage. He directed attention to the fact that he had been unable to detach the crusts from these ulcers either by douches or sprays so well as by the use of ointments, which in the course of two or three days enabled him to blow them out. The best ointment for that purpose was the ammoniated mercurial of the Pharmacopœia, made up with vaseline, one-half the full strength. After plugging the nostrils, especially in children, he has found flexible probes most useful. He had never found anything which arrested the hemorrhage so well as sheet sponge. He had used it by cutting it into long strips and pushing it into the nose until the bleeding stops.

The communication was discussed by Dr. Sajous, of Philadelphia.

Saturday, May 28th—Third Day—Morning Session.

The Association was called to order by the President, and Dr. S. W. Langmaid, of Boston, read an exceedingly valuable paper on

CONSTITUTIONAL CAUSES OF THROAT AFFECTIONS.

However important and interesting the morbid changes in the upper air-passages may be locally, the important lesson should be learned that they have underlying constitutional causes which must be removed in order to effect a cure. Syphilis, alcoholism, rheumatism, and gout, etc., were ever at work, and their influence must be combated. Local treatment was in the nature of repair, while constitutional and hygienic treatment must be in the direction of the renewal of normal processes.

Dr. Glasgow, of St. Louis, regarded the paper as one of the most timely which had been presented to the Association. He regarded the statement made by Dr. Daly, of Pittsburg, that the laryngeal physician should become a laryngeal surgeon, as one tending to do much harm, and it had done much to retard progress in this department of medicine.

Dr. J. Solis-Cohen, of Philadelphia, seconded the commendations of Dr. Glasgow, and said that if he could have his way, the Committee on Publication would be instructed *to print it in capitals.*

Dr. Asch and Dr. Delavan, of New York, added their hearty and forcible commendations of Dr. Langmaid's paper.

PAPERS READ BY TITLE.

"Affections of the Crico-arytenoid Articulation," by George W. Major, M.D., of Montreal;

"Cancer of the Larynx," by Hosmer A. Johnson, M.D., of Chicago; and

"A Case of Recurring Laryngitis Hemorrhagica," by C. E. Bean, M.D., of St. Paul.

Dr. Morris J. Asch, of New York, then read a paper in which he reported a case of

STENOSIS OF THE LARYNX

treated by divulsion and systematic dilatation. The opening of the larynx was diminished to one-third its normal size. The dilatation was accomplished by Schroeder's hard-rubber tubes. It was a case of hypertrophic laryngitis below the vocal cords, and the relief afforded by treatment had been permanent. He preferred this to any other method in this class of cases.

Dr. Cohen, of Philadelphia, had not had the courage to attempt to dilate without preliminary tracheotomy. He believed that it was better to perform tracheotomy first, and then pursue the most active measures possible for the relief of the stenosis.

Dr. Knight, of Boston, said that Schroeder's method had been very slowly popularized in this country. He regarded it as a sub-glottic laryngitis of some kind, as had been expressed by Mackenzie, of London, and would discard the name *corditis*, etc.

Dr. Morgan, of Washington, related a case in which he used dilators without permanent benefit, and in which he kept the disease in abeyance by constitutional measures and local applications. He recommended from time to time tracheotomy, to be followed by dilatation, but the patient declined, and finally died suddenly of laryngeal spasm.

Dr. Delavan, of New York, believed that the method of treatment by dilatation would receive important modifications by O'Dwyer's method of intubation.

Dr. Asch spoke of some theoretical objections to O'Dwyer's method for the treatment of these cases. He agreed with Dr. Knight that the term *corditis*, etc., should be abandoned. He regarded it as one of the advantages of this method that tracheotomy was avoided.

Dr. D. Bryson Delavan, of New York, then read an elaborate paper on

THE ETIOLOGY OF DEFLECTIONS OF THE NASAL SEPTUM,

in which he had gathered the scattered views on the causes, which were generally admitted to be obscure. After discussing the predisposing causes, as race and diathesis, he spoke of the exciting causes under the headings, traumatism, local malnutrition, and occlusion of the respiratory passages of the nose.

Dr. Morgan, of Washington, had been able to trace his cases to traumatism almost invariably, when the history had been carefully studied. He had seen but few cases in the African, but whether or not this was real exemption he was unable to say.

Dr. Donaldson, of Baltimore, was also of the opinion that perhaps it was less frequent in the African than among the whites.

Dr. Solis-Cohen, of Philadelphia, had noticed that high-arched palate and deflected septum go together in a majority of cases, perhaps; but he had also seen many cases in which there was deflected septum without high-arched palate, and also high-arched palate without deflected septum. A great many children under *seven* years of age have deflected septum. He thought that the question of traumatism was a difficult one to settle. So also it was difficult to get at the exact influence of racial peculiarities. Over and over, he had seen marked deflection of the septum *without* difficulty of breathing.

Dr. Sajous, of Philadelphia, thought that traumatism as a cause could not be clearly defined.

Dr. Mackenzie, of Baltimore, had not seen a case of deflected septum in the African that required an operation. He regarded *traumatism* as the most prolific cause. He also had been surprised at the brilliant results said to attend some operations.

Dr. De Blois, of Boston, said that he had observed the nose of several pugilists and had been surprised to find that the septum was in the correct line, while the nose in general had been flattened and bruised with great severity and repeatedly. He thought that these cases could with propriety be regarded as traumatic.

Dr. Roe, of Rochester, spoke of several peculiar varieties of deflected septum, and particularly objected to the use of the punch in the treatment.

Dr. Ingals, of Chicago, had seen deflected septum in children two years of age, and he had also come to the conclusion that, unless the nasal bones were fractured or cartilages dislocated, deflection of the septum was not likely to follow traumatism.

The discussion was closed by Dr. Delavan.

Dr. Langmaid, of Boston, related the case and presented

A PIN THAT WAS REMOVED FROM THE LARYNX,

where it had been for two years. It was sticking through the ventricular band and pointing backward.

Dr. Knight, of Boston, had seen the case, and spoke of its peculiar interest.

Dr. Solis-Cohen, of Philadelphia, mentioned what he had noticed for some time in ordinary examinations, and that was what appeared to be

A MUSCLE EXTENDING FROM THE OPENING OF THE EUSTACHIAN TUBE

across upon each side.

Dr. Rufus P. Lincoln, of New York, read the report of a case of

RECURRENT NASO-PHARYNGEAL TUMOR,

which he had cured by electrolysis. He used a single needle, and made sixteen applications in from four to six days. The growth had not shown any tendency to return.

The paper was discussed by Drs. Delavan, of New York; Langmaid, of Boston; Glasgow, of St. Louis; Solis-Cohen, of Philadelphia; and Hooper, of Boston, who spoke in commendation of this procedure in preference to the more formidable surgical operation, in cases diagnosticated early.

Dr. W. C. Jarvis, of New York, read a paper in which he reported

TWO CASES OF CONGENITAL OCCLUSION OF THE ANTERIOR NARES.

This is a rare condition. He had been unable to find a case recorded in medical literature, and the two reported were the only cases which he had met with in several thousand patients examined at his clinics. They were treated by means of his nasal drills and electromotor. In one case the obstruction was fibrous, and in the other osseous, and the results of treatment were very satisfactory.

Afternoon Session.

Dr. Alexander W. MacCoy, of Philadelphia, gave an abstract of his paper on

A COMPARATIVE STUDY OF SOME OF THE METHODS OF TREATMENT BEST ADAPTED TO THE RELIEF OF OCCLUSION OF THE POSTERIOR NARES

due to hypertrophy of soft parts, and not bony occlusion of the posterior nares, which he had never seen. He referred to different methods, and the difficulties which had been offered in way of reaching the posterior nares, and lack of precision in making applications. Since the advent of cocaine these difficulties, to a certain extent, had been overcome, but the effect produced by the drug rendered comparatively useless certain instruments which heretofore had been used satisfactorily; for instance, Jarvis' snare, the use of which he had ceased, except for the removal of nasal polypi, etc. From the fact that cocaine caused such retraction of the tissues, he had not been able to make use of the needle recommended by Jarvis; but, at the same time, the drug had brought into greater use the galvano-cautery and chromic acid.

The chief point in the paper was to present the superior advantage offered by a concealed flexible instrument for applying fused chromic acid. He preferred this to all other methods for removing these posterior hypertrophies.

Dr. Jarvis, of New York, regarded his transfixion needle as one of the most serviceable instruments he used for the removal of hypertrophied nasal tissue. He never used cocaine as a preliminary step, but first included the hypertrophy within the loop, drew the wire home, and

then applied the cocaine. He regarded chromic acid as dangerous and likely to be followed by unpleasant results. He never thinks of attempting to remove a hypertrophy by means of the galvano-cautery.

Dr. Rice, of New York, said that it was often difficult to remove these hypertrophies. He had given up the use of the transfixion needles. There were cases in which it was difficult to apply the loop posteriorly. He had never met with the disadvantages in the use of chromic acid spoken of by Dr. Jarvis.

Dr. Donaldson, of Baltimore, favored the use of chromic acid, as did his father, who had used it without bad results for many years. As to the needles, technical skill was required for their use, and in one case he had profuse hemorrhage following their use.

Dr. Delavan, of New York, had used chromic acid, discarded it, used it again, and had again discarded it. As for hemorrhage, he had not seen a case where it could not be controlled readily, and he believed that, practically, there was no danger from it.

Dr. Jarvis said that an attempt to remove a posterior hypertrophy, while a deflected septum existed, was very poor surgery. First remove the deflected septum, and the hypertrophy will disappear of itself. He regarded it as trifling with the patient's nostrils to use chromic acid when the hypertrophied tissue can be removed so easily with the transfixion needles.

The discussion was closed by Dr. MacCoy, who said that he had never been able to reach the posterior face of the middle turbinated bone before his little instrument was invented. A single application of chromic acid was, as a rule, all that was required. In comparison with it, he regarded the use of the needle as a very difficult operation. He never uses chromic acid without immediately antagonizing it.

Dr. Jarvis remarked that the fault was not in the needle but in the operator, who failed to make the few simple manipulations necessary to its successful use.

The paper by Dr. J. W. Robertson, of Detroit, on

PLASTER-OF-PARIS DRESSING FOR FRACTURE OF THE NOSE,

was read by title.

Dr. De Blois, of Boston, exhibited a plaster-of-Paris splint which he had used with good result in one case of fractured nose.

Dr. Jarvis explained his external splint, which he uses after operating on the cartilages and bones in certain cases of deflected septum, and thought it might answer a good purpose in cases of fracture.

Dr. Roe, of Rochester, exhibited a nasal saw which was operated by means of an electro-motor.

The Association then went into executive session.

A Dakota Doctor.—The Board of Health of Dakota publishes the results of an examination of an applicant for a license to practise medicine. He had been practising medicine for years in a populous district of South Dakota. Here are some questions and answers: Question. What medical journal do you take, doctor? Answer. Well, they have all run out. Q. Don't you intend to take any of them again? A. Well, I can get along without them. Q. What books have you in your library? A. "Gunn's Family Physician and Common Sense Home Doctor." Q. What is an element, doctor? A. Oh! anything. Q. Is that bed an element? A. Yes. Q. Name the three great cavities of the body. A. The head, the belly, and the diaphragm. Q. Mention the contents of the cranium. A. The brain and three skins. Q. Name contents of abdominal cavity. A. Kidneys and the prostate gland. Q. Does the prostate gland ever become enlarged? A. Yes. Q. Have you treated any cases of enlarged prostate? A. Lots of them. Q. With what success? A. Tip-top! Never lost a case. Q. Did you ever treat any female for enlarged prostate? A. Oh, yes; numbers of them.

MEDICAL SOCIETY OF THE COUNTY OF NEW YORK.

Stated Meeting, May 23, 1887.

Laurence Johnson, M.D., President, in the Chair.

Dr. Ralph L. Parsons read a paper, entitled

THE CLASSIFICATION OF MENTAL DISEASES; WITH THE SUGGESTION OF A COMPREHENSIVE METHOD DESIGNED TO HARMONIZE WITH AND HARMONIZE OTHER METHODS.

After reviewing the bases of the classifications which have been published by different writers, Dr. Parsons offered what he called a method, based upon symptomatology and etiology, for which he claimed the following advantages:

First.—It was a method so elastic and comprehensive that in it any variety of insanity which could be differentiated might be included, and all varieties and subvarieties could be reduced to a few fundamental conditions.

Second.—It includes all other systems in vogue.

Third.—It includes as many of the related facts as possible.

Fourth.—It has arranged, in tabular form, every variety of insanity, for comparison and for statistical purposes.

The four great divisions made were oligomania (monomania or paranoia), mania, melancholia, and dementia.

Dr. C. L. Dana spoke of the great difficulty that had been experienced in making a satisfactory classification of insanity, and he thought that the profession was indebted to Dr. Parsons for his endeavor to harmonize different views. Practically, he had adopted the classification of Skae, enlarged by Clouston, and modified by Kellogg; a system based partly upon etiology and partly upon symptoms. He regarded Dr. Parsons' classification as practically the same thing, and he was pleased to see that the author of the paper had independently brought forward the classification which was the most practical for working purposes, and had ingeniously combined other classifications in a more practical manner than he had yet seen. Dr. Dana, however, was very loath to leave out of any classification the degenerative types. As to the term "oligomania," he had already expressed a doubt as to the propriety of introducing a new term, although the term itself might not be specially objectionable.

Dr. Leszynsky spoke of the convenience of Dr. Parsons' method for practical purposes, arranged, as it was, for ready comparisons, and assignment of cases to the class in which they belonged.

Dr. Parsons remarked that, however good Skae's system might be, it was so imperfect that it was practically useless, and that Clouston did not follow it. If it were possible to apply the system, he would be ready to regard it as the best. All that he had attempted in his method was to so combine the different classifications as to make them as useful as might be.

THE DEATH OF DR. E. D. HUDSON, AND THE COMMITTEE ON ETHICS.

The President announced the death of Dr. E. Darwin Hudson. By his death a vacancy was created in the Committee on Ethics, of which he was the Chairman. The President appointed Dr. Alexander S. Hunter to fill the vacancy as *Chairman*, and Dr. C. E. Billington to fill the vacancy created in the Committee.

The Society then adjourned, to meet on the fourth Monday in September.

Sugar from Fat.—Seegen has recently shown experimentally that the liver can make sugar out of fat, and that, as a nutritive, fat is twice as valuable as sugar.

Correspondence.

OUR LONDON LETTER.

(From our Special Correspondent.)

LUNACY LAW—CONGENITAL DISLOCATION OF THE HIP—A CLAMP FOR THE LINGUAL ARTERY—SURGERY AND RENAL SARCOMA—MALARIA AND POLITICS—DEATH OF DR. ALFRED MEADOWS.

LONDON, April 23, 1887.

Two recent occurrences have once more drawn attention to the unpleasant state of our present lunacy law. One of these is the bankruptcy of a medical man, bearing a well-known name, who had been involved in a long course of litigation in connection with the case of the now notorious Mrs. Weldon. No *mala fides* was alleged against him, but for signing (in conjunction with another medical man) a certificate whereby the lady in question was removed to an asylum and detained for a short time when not really insane, a jury mulcted him in a thousand pounds damages and costs. The *finale* to this is his appearance in a bankruptcy court, owing to his inability to pay the amount for which he has become liable. A somewhat similar case occurred very recently at the West End, but here the doctor was more fortunate in the matter of law. On regaining her liberty the patient prosecuted her doctor, but was non-suited, and judgment entered in favor of the doctor with costs. It was clearly established that, whatever might be the mental state of the patient at the time of the trial, she was, when incarcerated, plainly insane. Although nominally successful, the doctor, however, made a heavy pecuniary loss, for the patient, on losing the action, professed herself a pauper, and declared her inability to pay the costs. Such cases as these are enough to make doctors refuse to certify insane patients at any price. It is hoped that provision may be shortly made to remove by legislation such anomalies as the above. Several lunacy bills have been drafted within the last few years. That brought forward now seems to have some chance of being piloted successfully through the various dangers that beset it and of becoming law.

The last meeting of the Pathological Society was devoted almost entirely to the subject of congenital dislocation of the hip. Several specimens were shown, and their clinical histories narrated. At the Medical Society Mr. Lockwood read a paper on "A Method of Restraining Hemorrhage during Operations on the Tongue." Forceps were exhibited which he had devised with a view of compressing the lingual artery. One blade passed by the side of the tongue into the pharynx. The other was fitted to the outside of the lower jaw and met the other blade near the greater cornu of the hyoid bone, the artery being thus gripped between them. Dr. Money read a paper on the "Possibility of Surgically Treating Renal Sarcoma Occurring in Infancy." He thought there might be a chance for surgical treatment if the tumor were detected when very small. This could rarely be done, and in every one of the four cases he had observed the first clinical sign was enlargement of the abdomen. The prospect of being able to apply surgical treatment with advantage was, therefore, not very hopeful.

In Mr. North's lecture on "Malarial Fever," delivered at the London Institution on Monday last, he dwelt at some length on the relations of malaria to climate. It was pointed out that politics, as well as physical geography, had had something to do with the production of the present condition of the Roman Campagna. We had historical evidence that many localities now so malarious as to be uninhabitable were formerly highly esteemed by the Romans as health resorts. The invasions of the Goths depopulated these places and led to the development of malaria in districts where it had formerly been kept under control by human toil in cultivating the district. Mr. North referred to the recklessness displayed of late years in the cutting down of timber in the elevated districts as contributing toward the development of malaria in the lowlands. The removal of trees caused mountain streams to become uncontrollable, and thus led to the conversion of large areas of the lowlands into bog and swamp.

One by one the best known names in medical London are disappearing by death, and another generation is springing up to supply their place. The latest loss by death among men of note is that of Dr. Alfred Meadows, Obstetric Physician in St. Mary's Hospital, who died almost suddenly a few days since. He was well known as an obstetrician, and held numerous appointments. He was educated at King's College, and was for a short time Assistant Obstetric Physician to King's College Hospital, a position he subsequently relinquished to join the staff of St. Mary's Hospital. It is, of course, quite exceptional for a physician or surgeon who has become connected with one medical school to leave it for another. Now and then this occurs. One living obstetrician (Dr. Robert Barnes) has been connected successively with three out of the eleven medical schools in London, viz.: The London, St. Thomas', and St. George's Hospitals. Dr. Meadows was lately President of the British Gynecological Society, and the author of several works of repute, including a useful "Manual of Midwifery," which reached a fifth edition. At the time of his death he was in the enjoyment of a large and lucrative practice.

OUR PARIS LETTER.

(From our Special Correspondent.)

MORPHINOMANIA.

PARIS, April 22, 1887.

DR. OSCAR JENNINGS, one of the English practitioners of Paris, has had peculiar opportunities for studying the comparatively new disease termed morphinomania, and he has committed his observations to paper, which he communicated through Professor Ball to the Paris Academy of Medicine at one of its recent meetings. The paper was premised by the following remarks: "Among the numerous phenomena which result from the introduction of morphine into the economy by hypodermatic injections, there is one which has not been noticed by authors on the subject, and that is the state of the pulse, which offers at the same time a means of diagnosis, an indication relative to the treatment, and a rational explanation of some of the effects produced by this poison." The pulse, studied in the subjects of this disease by the aid of the sphygmograph, presents three different phenomena. During the state of "satisfaction," when the subject is still under the influence of a recent injection, the pulse is sensibly normal, but with a slight increase of tension at the end of the systole. When, on the contrary, the subject is in a state characterized by an irresistible desire to return to his habitual stimulant, the sphygmographic tracing of the pulse presents a "plateau" most characteristic—the portion of the curve which corresponds to the systolic impulsion is absolutely truncated. When the patient has been deprived of morphia for several days a febrile condition is produced, the body temperature rising to as much as 101° F., when the amplitude of the systole reappears. The "plateau" above referred to is an index of the feebleness of the cardiac impulsion, and this state of the circulation explains the feeling of faintness which so profoundly troubles the minds of the patients, and it is in these conditions that the *want* of the habitual stimulant is aroused which essentially constitutes the malady. In patients who conceal their vice, the presence of this "plateau" in a sphygmographic tracing constitutes an infallible element of diagnosis. It is known that morphinomaniacs, deprived of their habitual stimulant, return to their normal condition after a struggle more or less difficult and more or less pro-

longed. The problem to resolve consists therefore in suppressing the habitual stimulant and replacing it, at the moment when the want is felt, by a drug capable of arousing the activity of the circulation, and of restoring to the tissues the aliments indispensable to them. Various drugs have been vaunted as substitutes for morphia: Alcohol, coffee, paraldehyde, cocaine, apomorphine, chloral, vaniline, pilocarpine. But the greater part of these drugs have been found not only insufficient, but hurtful. They produce troubles peculiar to them and which often add to the inconveniences of morphia, without in any measure attenuating them. The authors thought that cardiac tonics were clearly indicated. With this view they had recourse to the sulphate of sparteine administered hypodermatically, which they did at the moment where the feebleness of the heart was indicated by the plateau of the sphygmographic tracing as well as by the inmost sensations of the patient. An injection of from two to four centigrammes was employed at this moment, which may be repeated if necessary, and in a few minutes the pulse was observed to be raised and the feeling of depression to disappear. The authors sum up the treatment of morphinomania as follows: 1. The patient should be removed from his own home and placed under the strict supervision of a physician. 2. The use of morphia should be more or less completely suppressed. 3. The action of the heart should be raised at the moment of depression, by an injection of sparteine, to which may be added, if necessary, an injection of morphia. Nitro-glycerine has also been administered in the form of a few drops placed on the tongue. Its effects are analogous to those of sparteine, but are much more rapid and much more ephemeral. The authors have obtained in a few weeks the best results from the above treatment, and if the patient is not completely cured, he or she is at least relieved of the imperious desire to return to his or her former habits.

I have spoken of the authors in the plural number, as the above paper was written conjointly by Drs. Ball and Jennings. Dr. Jennings, however, has developed the subject and published it in the form of a pamphlet, in which he gives some cases in detail, and makes some interesting observations on the pathology and treatment of this most intractable malady. In the treatment I find that the author extols valerian and soda, though he does not explain their mode of action in morphinomania. Dr. Jennings dwells upon the absolute necessity of the morphinomaniac being separated from his intimate relations and friends, and that he should be placed under the care of strangers, who would be in a better position to carry out the injunctions of the medical attendant; but the almost *sine qua non* for the cure is, according to the author, the *will* of the patient—that is to say, his determination to get well—without which all the efforts on his part and on that of the physician would prove of little or no avail.

At the instigation of Dr. Roussel, of Geneva, who extols the use of eucalyptol hypodermatically in the treatment of pulmonary phthisis as an effectual means of reaching the bacilli in the lungs, Professor Ball tried the remedy in his hospital, with the following results: Of 21 patients who were submitted to this treatment, 6 died, 10 were improved and left the hospital, and 5 were still under treatment on the date of the communication made by him to the Academy of Medicine. Dr. Ball remarks that one of the latter patients, whose sputa had been charged with tubercular bacilli, presented none on that day. The mode of operation adopted by Dr. Roussel consists in injecting hypodermatically one gramme of a solution composed of eucalyptol dissolved in two volumes of olive-oil, which is performed in the thickness of the skin by the side of the mouth. But Dr. Dujardin-Beaumetz, who experimented with this mode of treatment, declared at a subsequent meeting of the Academy that the results dotained by him differed from those announced by Dr. Ball. He had never observed the disappearance of the bacilli. It is true that eucalyptol diminishes the expectoration, but then the patients suffer from great oppression. Moreover, the exhalation of this substance from the lungs disgusts the patient and takes away his appetite. In fine, this treatment presents more inconveniences than advantages.

Army and Navy News.

Official List of Changes in the Stations and Duties of Officers serving in the Medical Department, United States Army, from May 29 to June 4, 1887.

FRYER, B. E., Major and Surgeon. Granted two months leave on account of sickness, permission to apply for an extension. S. O. 28, Division of the Pacific, May 28, 1887.

BROWN, PAUL R., Captain and Assistant Surgeon. Granted leave of absence for four months. S. O. 126, A. G. O., June 2, 1887.

PERLEY, H. O., Captain and Assistant Surgeon. Relieved from duty at Fort Maginnis, M. T., and ordered for temporary duty at Fort Snelling, Minn. S. O. 49, Department of Dakota, May 23, 1887.

WOOD, LEONARD, First Lieutenant and Assistant Surgeon. Ordered for temporary duty at Fort Huachuca. A. T. Relieved from duty at Headquarters, Department of Arizona. S. O. 126, A. G. O., June 2, 1887.

SUTER, WILLIAM N., First Lieutenant and Assistant Surgeon (recently appointed). Ordered for temporary duty at Washington Barracks, D. C. S. O. 122, A. G. O., May 27, 1887.

Official List of Changes in the Medical Corps of the United States Navy for the week ending June 4, 1887.

BRANSFORD, JOHN F., Surgeon. Ordered to the Smithsonian Institution at Washington, D. C.

TRYON, J. RUFUS, Surgeon. Detached from the U. S. S. Quinnebaug and ordered home.

SIEGFRIED, CHARLES A., Surgeon. Ordered to the U. S. S. Quinnebaug.

MARTIN, WILLIAM, Assistant Surgeon. Detached from the U. S. S. Pinta and ordered home.

FITTS, HENRY B., Passed Assistant Surgeon. Detached from the Receiving Ship Vermont and ordered to the U. S. S. Pinta.

FIELD, JAMES G., Assistant Surgeon. Ordered to the Receiving Ship Vermont.

Medical Items.

CONTAGIOUS DISEASES—WEEKLY STATEMENT.—Report of cases and deaths from contagious diseases reported to the Sanitary Bureau, Health Department, for the week ending June 4, 1887:

	Cases.	Deaths.
Typhus fever	0	0
Typhoid fever	7	3
Scarlet fever	64	12
Cerebro-spinal meningitis	4	4
Measles	59	4
Diphtheria	115	50
Small-pox	10	4
Yellow fever	0	0

URETHRO-VESICAL VAGINAL FISTULA.—M. Pozzi, in the Surgical Society of Paris, narrated a case of successful operation for urethral vesical vaginal fistula in a patient who had been unsuccessfully operated on eleven times in the preceding eleven years. He ascribes his success to the use of the American urethral forcing method.—*Medical Press.*

The Medical Record

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Original Articles.

INTUBATION.[1]

By FRANCIS HUBER, M.D.,

CLINICAL ASSISTANT OF DISEASES OF CHILDREN AT THE COLLEGE OF PHYSICIANS AND SURGEONS, NEW YORK.

In the treatment of laryngeal stenoses depending upon the presence of pseudo-membrane (the symptoms being sufficiently well marked to warrant operative interference), the laryngeal brush, sponge, probang, and forceps; catheterization of larynx, tubage, intubation, and tracheotomy have been employed to relieve the urgent dyspnœa. The brush, probang, and forceps are but temporary expedients intended to remove loose membrane, and afford relief for the time being. Catheterization, tubage, and intubation, while facilitating the expectoration of membrane, are resorted to primarily for the purpose of relieving the dyspnœa, the immediate source of danger in the severer forms of pseudo-membranous or diphtheritic laryngitis. Tracheotomy, it is true, relieves the dyspnœa, but, for reasons apparent later on, I would advise the operation in those instances only in which intubation fails. In view of the results reported thus far such cases, I venture to predict, will be exceptional.

The brush, probang, and forceps are not often used at present. Catheterization is an infrequent procedure, and has not served its purpose as well as was anticipated. Tubage, injudiciously advocated by Bouchut and condemned by Trousseau, soon fell into disuse. In a number of text-books it is referred to in a contemptuous way and dismissed in a few words.

To quote from Pepper's "System of Medicine" (vol. iii., page 107): "Tubage was rendered ridiculous at once by the assertion of Bouchut (1858), that children suffering from croup, who were supplied by the laryngeal tube, were not only relieved at once, but expressed their gratitude in audible oratory. Still there are some cases of more recent date in which tubage is reported to have been attended with success. It is not very probable, however, that a larynx which admits of no air, because of its being clogged with firm pseudo-membrane, should be willing to admit and endure the presence of a tube." Such was the almost universal teaching up to within a short time. Physiology, theory, and practice were against the new method. To-day, however, the author of the quotation referred to above, whose name is familiar over the two continents, a strong advocate of tracheotomy, and who has performed more tracheotomies than any six American surgeons, and with the average success, proclaims himself a convert to intubation, and teaches its advantages in his clinical lectures. Recently, before the State Medical Society, he has publicly discarded the opinion expressed above, and states that a large number of children have been relieved immediately, not only temporarily, but permanently, by intubation.

Unphysiological, ridiculous, improbable, impracticable, and dangerous as the procedure may appear to those not practically familiar with the measure, hundreds of cases in the practice of various independent observers have demonstrated the practicability, utility, and advantages of intubation as originated and practised by Dr. Joseph O'Dwyer, of New York. The dyspnœa is as effectually removed in intubation as after a tracheotomy, and though the children may not thank you, the ability to speak is maintained, and the little one can express his or her wants in "audible oratory." The marked and almost instantaneous change in the appearance and condition, the quiet sleep and quiet respiration, the absence of any external wound, shock, and other evidences of an operation more or less prolonged and difficult, impress one more forcibly than thanks. The whisper of a patient with an O'Dwyer tube in his larynx, rescued, in an incredibly short time from impending suffocation, by intubation, is more agreeable to the parents and physician than the loud tracheal breathing of a child wearing a tracheotomy tube, unable to express its wants or sensations by the least sound. I have frequently seen little patients, upon whom a tracheotomy had been performed, not able to make their attendants understand their wants, become restless, excited, and miserable, until, perhaps after the lapse of a few moments, after considerable guessing, first showing one article, then another, asking question after question of the speechless little sufferers and watching the face for an answer—finally, more by chance than otherwise, quiet down at last, when they had made themselves understood by a nod or motion, as the desired object was brought or want was gratified.

That the larynx will tolerate a tube has been demonstrated repeatedly and beyond question. The sensitive organ which rebels when a crumb of bread or a few drops of water go the "wrong way" in swallowing tolerates the tube, not for a few seconds or minutes, but for days and even weeks. The intubation-tube does not act the part of a foreign body, the presence of which excites and irritates the laryngeal orifice; the passage, so to speak, has been forced, and the tube rests within the box of the larynx and trachea and is covered by the epiglottis—rests there quietly, without exciting any reflex action or spasm. We are aware of its presence objectively by the unobstructed respiration and the full, explosive, metallic, characteristic cough induced by swallowing liquids.

Bichat reports that Dessanet, in 1801, accidentally demonstrated the fact that the larynx and trachea would tolerate a tube. This knowledge he put to good use, and, in a case of œdema of the glottis, he allowed a catheter to remain for one and a half day, the patient recovering. In 1854 Horace Green announced that he could swab out the trachea and pass a flexible tube into either bronchus, and thus inject strong solutions of nitrate of silver into tuberculous cavities. Trousseau, in his article on the "Treatment of Diphtheria and Croup," discusses catheterism of the larynx, states that Dieffenbach had practised it in 1839, speaks disparagingly of Green's method, and lauds the plan proposed by Loiseau. The latter "arms the first two phalanges of the index-finger with a bent metallic finger-stall, which leaves free the last joint and the distal phalanx. The finger thus protected is carried down into the throat as deep as possible, and with the extremity of the finger the epiglottis is raised. This being accomplished, nothing is easier than to introduce an instrument into the larynx."

In a case of œdema of the glottis Hack employed one of Schroetter's bougies. The tube was removed and the patient sent to the hospital. On the way, being attacked with severe dyspnœa, the man introduced the tube into his own larynx.

[1] Read before the New York Academy of Medicine, June 2, 1887.

McEwen (*British Medical Journal*, July 24, 31, 1880) has shown that a catheter or tube, introduced through the mouth, may be employed as a substitute for tracheotomy or laryngotomy in case of disease or operation. Monti, of Vienna, has for years made use of hard-rubber tubes, introducing them into the larynx and allowing them to remain *in situ* twenty-four hours or more. One end protrudes from the mouth; they are resorted to as temporary expedients, made use of only until tracheotomy can be performed.

Stockton, of Chicago (*Jour. Am. Med. Assoc.*, May 2, 1885), employed silver tubes of various shapes, with and without flanges, but soon discontinued his experiments. Weinlechner, Monti (referred to above), and Schroetter have employed catheters to provide an artificial aperture in croup. Recently, catheterization of the trachea and bronchi has been revived by Reichert and others, and various applications made directly to the sub-laryngeal air-passages, the parts being anæsthetized by cocaine.

Dr. Landgraf (assistant at Professor Gerhardt's clinic) catheterized the left bronchus (man, aged fifty-two years) several times weekly, cocaine being applied to the trachea and larynx, and succeeded in passing an obstruction eleven inches down, caused by the presence of an aortic aneurism. The relief to the dyspnœa and distressing cough was enormous. To enter the domain of laryngeal surgery proper, and quote instances which exemplify the tolerance of the larynx to instrumental interference would lead me too far.

In September, 1858, Bouchut read a paper before the Academy of Medicine (Paris), entitled "A new Method of Treatment of Croup by Tubage of the Larynx." His conclusions were, briefly:

1. Tubage is easily accomplished by means of a cannula fastened upon the inferior vocal cords, without interfering with the functions of the epiglottis.
2. The tolerance of the cannula by the larynx.
3. The possibility of relieving the dyspnœa of croup and other laryngeal affections without tracheotomy.
4. The facility with which the membrane is expelled through the tube.
5. The advantages of tubage to the country practitioner far from assistance, etc.

Trousseau, as chairman of the commission appointed to investigate the subject, reported as follows:

Tubage of the larynx in certain cases of acute laryngitis can, by retarding asphyxia, prove of curative value.

In certain chronic diseases of the larynx it will allow one to delay tracheotomy, and sometimes relieve and cure the patient.

In the treatment of croup it delays asphyxia and allows a more easy introduction of air and agents capable of modifying the diphtheritic inflammation.

It can only very rarely supplant tracheotomy, which is the principal means of opposing croup when medical measures fail.

Ridiculed and condemned as unphysiological and impracticable by Trousseau, it fell into disuse and was soon forgotten.

Without any prior knowledge of what had been done, Dr. Joseph O'Dwyer, after a great many experiments, rediscovered intubation, and has since completely vindicated the position taken by Bouchut. The instruments devised and perfected by O'Dwyer are in no respects like those employed by the French physician. The tubes of Bouchut were hollow cylinders, narrower at one end and less than an inch long; they rested upon the vocal cords and did not reach into the trachea. A thread was left attached and was brought out at the angle of the mouth, to facilitate removal and prevent them being swallowed.

The instruments of O'Dwyer have passed through successive stages of evolution, and are too well known to require any extended description.

The number on the scale (Fig. 3) indicates the years for which the corresponding tubes are suitable. For instance: The smallest tube, when applied to the scale, will reach to the first line, marked 1, and is intended to be used up to the age of twelve or fifteen months; the size marked 2 is suitable for the next year; 3 and 4 for these years, and so on. When the proper tube is selected for the case to be operated on, a fine thread is passed through the small hole near its anterior angle, and left long enough to hang out of the mouth; its object being to remove the tube, should it be found to have passed into the œsophagus instead of the larynx.

The obturator is then screwed tightly to the introductor, to prevent the possibility of its rotating while being inserted and passing into the tube; the groove in the upper extremity of the obturator being made to correspond to the small hole in the tube intended for the string.

FIG. 4.

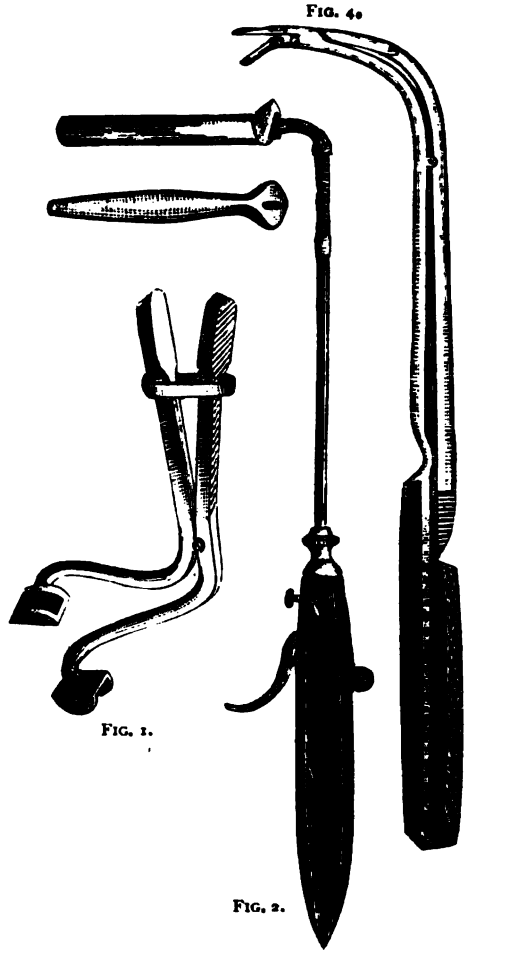

FIG. 1.

FIG. 2.

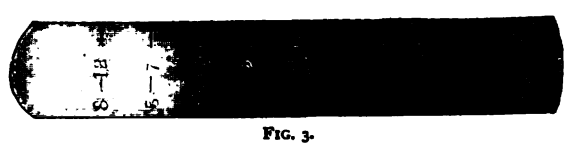

FIG. 3.

The following is the method of introducing the tube, which is done without the use of an anæsthetic: The child is held upright in the arms of a nurse, and the gag (Fig. 1) inserted in the left angle of the mouth, well back between the teeth, and opened widely; an assistant holds the head, thrown somewhat backward, while the operator inserts the index-finger of the left hand, to elevate the epiglottis and direct the tube into the larynx.

The handle of the introductor (Fig. 2) is held close to the patient's chest in the beginning of the operation, and rapidly elevated as the cannula approaches the glottis. The tube is then pushed downward, without using much force. It is then detached. The joint in the shank of the obturator is for the purpose of facilitating this part of the operation. As soon as the obturator is removed, and it is ascertained that the tube is in the larynx, the

thread is withdrawn, but at the same time the finger is kept in contact with the tube, to prevent its being also withdrawn.

It is important that the attempt at introduction be made quickly, as respiration is practically suspended from the time that the finger enters the larynx until the obturator is removed. It is, therefore, under the circumstances, much safer to make several abortive attempts than one prolonged effort, even if successful.

For the purpose of removal, the patient is held in a similar position, except that the head is not inclined backward, or very slighly so, and the extractor is passed into the tube, guided by the index-finger of the left hand, which also fixes the epiglottis, and is brought in contact with the head of the cannula. Firm pressure with the thumb is then made on the lever above the handle, while the tube is being withdrawn. If secondary dyspnœa supervenes at any time the tube should be removed and a larger one substituted. If the case progresses favorably, the tube should be removed on or about the fifth day.

To avoid accidents, it is very essential to have some preliminary practice on the cadaver, particularly in extracting, which is the more difficult operation, owing to the aperture of the tube being so much smaller than that of the larynx.

In very young children particularly, extraction is facilitated by pushing the larynx upward and backward with the thumb of the left hand externally, the index-finger being in contact with the head of the tube. In the absence of a cadaver, it has been suggested to practise intubation upon dogs anæsthetized.[1]

In introducing or extracting, the instruments should be worked in the median line, the operator facing the patient squarely.

Waxham advises that in introducing or extracting, the point of the instrument should be placed under the finger, not over or alongside.

Dr. Cheatham, of Louisville, suggests that inversion of patient, or inversion with sharp blow on the back or irritating the soft palate or pharynx, may be tried in in order to remove the tube. We recognize that the tube has been successfully introduced: 1, By the occurrence of a paroxysm of coughing; 2, by the relief of the dyspnœa. The cough is full, explosive, characteristic, and accompanied by the expectoration of large quantities of mucus and shreds of membrane.

Intubation has passed the experimental stage. It has been performed hundreds of times by O'Dwyer, Dillon, Brown, and Waxham.

Northrup and Denhard have also done it in quite a large number of cases. The procedure is extensively employed in New York, Chicago, and Philadelphia, and though not as yet an established method, it has a good record and a great future.

The above list does not represent all the cases of croup treated, but only those in which operative interference was indicated. In my own practice I have not found it necessary to resort to intubation in a larger proportion than one out of three or four cases of laryngeal stenosis treated from the onset. I will say, and would emphasize the assertion, that intubation should not be resorted to until the stenosis assumes a dangerous character and the case, if seen sufficiently early, has not been benefited by proper medicinal means. I am well aware of the truth of the statement made by Thomas: "There is nothing easier than the rejection of the testimony of others and the discrediting of the deductions which we ourselves have not drawn" ("Diseases of Women," p. 458). The instances of recovery which I report above were cases which, in the opinion of the various gentlemen present at the time, would have terminated fatally if the obstruction to respiration had not been removed. The cases were similar in severity to those in which, up to a year ago, I advocated, and would have performed, tracheotomy.

Before entering upon a consideration of the accidents, mishaps, and objections to the process, I shall devote a few words to the diagnosis of croup and the indications for operative interference. When called to a case, assure yourself that the dyspnœa is of laryngeal origin. Examine the neck and chest carefully. Inattention to this point has occasioned some grave errors. In one case the removal of a mass of poultices and bandages from the neck revealed a large abscess in front of the larynx, incision of which, with the insertion of a drainage-tube, caused the disappearance of the laryngeal symptoms. In a second case a child, sixteen months old, with hoarseness and difficulty of breathing, was referred to me with the diagnosis of croup. A careful examination of the chest revealed a large empyema. Several cases are known to me in which retro-pharyngeal abscesses have been mistaken for croup.

The diagnostic symptoms of membranous obstruction are croupy cough, aphonia, croupy inspiration and expiration, with progressive, unremitting dyspnœa, marked supra-sternal and epigastric retraction, and continued restlessness. Auscultating the chest posteriorly, we find the normal vesicular murmur feeble or absent. Finally, cyanosis occurs, with feeble and irregular pulse. The temperature, unless there be septic absorption from diphtheritic deposits in the nose or pharynx, or some inflammatory complication in the chest, will not exceed 100° or 101°. "One of the pathognomonic symptoms of diphtheritic laryngitis, 'membranous croup,' is the relative absence of fever." "Catarrhal laryngitis, pseudo-croup, is a feverish disease. A sudden attack of 'croup,' with high temperature, provided there is no pharyngeal or other diphtheria present, yields a good prognosis; without much fever a very doubtful one." "In œdema of the ary-epiglottic folds and post-attachments of the vocal cords, with or without membranous deposits elsewhere, we have the symptoms of true croup with its dangers. Inspiration is impeded, owing to the partial paralysis of the vocal cords; expiration, however, is free, and the voice is more or less intact. Diagnosis may be made by palpation. Aphonia, with difficulty of breathing in both inspiration and expiration, points positively to membranous occlusion" (Jacobi).

True croup, as it progresses, presents a picture "the likes of which the most hardened man, the most experienced medical attendant, prays never to behold again." To relieve the sufferings and struggle of the little patient for air intubation has been proposed. And now, *when* shall we resort to operative interference? As soon as the supra-sternal and epigastric retraction is marked, when there is great and continued restlessness owing to the progressive severe dyspnœa, and the normal vesicular murmur is feeble or absent at the posterior inferior portion of the lung, we ought to intubate. Cyanosis, with a feeble and irregular pulse, pulmonary complications, or septic manifestations, ought not to deter one from intubating, even in instances apparently hopeless. It is well, however, to give a hypodermic of brandy, caffein, etc., before operating in these desperate cases.

My own cases up to the present, numbering 47, are presented in a tabulated form for convenience and ready reference.

ACCIDENTS, MISHAPS, AND OBJECTIONS. — *Gag.*— O'Dwyer's gag may be displaced by struggles of child. Denhard's modification of above, not liable to this accident, should be employed. If heart's action weak or general condition poor, separation of jaws by gag may cause alarming symptoms of asphyxia due to falling back of tongue. In this condition give hypodermic of brandy, or caffein, or other cardiac stimulant before inserting gag—pull tongue forward.

Thread ought to be eighteen to twenty inches long, and if not removed at once, looped over the ear to pre-

[1] The finger ought to be educated and digital examinations made of epiglottes and adjoining parts in children suffering from throat-disorders.

vent its being swallowed. In a case reported by Dr. Hance, traction upon the string by the muscles of deglutition caused the tube to be pulled into the œsophagus and swallowed. In one of Dr. Agan's cases, the thread being swallowed, a bent probe was used to fish it up. In Dr. Schottky's case, the thread being too short, the tube, having slipped into the œsophagus, entered the stomach and was passed per anum two days later. (A second tube, after considerable difficulty, owing to the swollen condition of the parts, being placed in the larynx, child recovered.) Tipton (THE MEDICAL RECORD, May 28, 1887) reports that in wiping away some saliva the silken cord was caught, tube dragged out of larynx and swallowed, before the cord could be grasped. A second tube now introduced. First tube passed per rectum ten days later.

Tube.—(*a*) May enter the œsophagus, recognized by breathing not being improved and cough still croupy.

(*b*) Danger of delicate parts being lacerated; the rounded end of the obturator closes the lower portion of tube completely and prevents injury, unless force be employed.

(*c*) Membrane may be crowded down in front of tube. This is a possible and serious accident. When it occurs and the membrane is not expelled when the tube is removed, tracheotomy may be necessary. Dr. Ferguson reports a case in which he was compelled to perform tracheotomy (*N. Y. Med. Journal*, March 5, 1887). In other instances this resulted in death of patient.

Dr. Waxham has devised a trachea-forceps to remove the membrane through the mouth when this unfortunate accident has taken place. He reports a case in which the accident occurred and in which a cast of the trachea and main bronchi were removed by passing the long trachea-forceps through the mouth into the larynx and trachea, in a child seven years of age (*Medical News*, January 1, 1887). "The intubation-tube was now introduced; respiration so quiet as to be scarcely observed."

In an instance in which the accident occurred to me, I gave some pure brandy (hoping that some would enter trachea through tube and cause expulsion), thus inducing a severe paroxysm of coughing which expelled tube and a large piece of membrane. The tube was reintroduced; breathing unobstructed; child recovered. In Dr. Caillé's case removal of tube was followed by expulsion of membrane.

The lateral bulging weight of tube, together with the anatomical fit and length, tend to keep it from being coughed out.

1. *The tube may be coughed out* (*a*) by a severe paroxysm of coughing, (*b*) if too small, or (*c*) if a plug of mucus or membrane is below it. Not serious, as breathing is generally improved and dyspnœa will not return for several hours. This has been my experience. When dyspnœa returns tube can be reintroduced.

2. *May become occluded* by mucus or membrane. As the air is warm and moist and the inner surface of tube is smooth, mucus passes through tube readily. When tube becomes occluded with membrane the tube is coughed out in many instances. One case, however, is reported by Dr. Wheeler (*N. Y. Med. Journal*, February 26, 1887) in which plugging of tube caused death of child.[1]

3. Tube may *be coughed up and then swallowed.* Dr. Parkes refers to a case in a young lady, seventeen years of age, who passed tube per rectum twenty-four hours after intubation. In Dr. Montgomery's case it was feared that as a smaller tube than suited to age was inserted, the tube might have passed into trachea. A tracheotomy was done and child recovered. Intubation-tube passed per anum two days later (*Med. News*, March 5, 1887). It seems to me that the proper plan would have been to have inserted a second tube. Dr. S. Hemingway kindly gave me the details of a case in which, after a violent fit of coughing, hoarseness was again noticed (four days after tube had been inserted by Dr. O'Dwyer). A week later the tube was passed per rectum.

4. Tube may *descend into the trachea.* This accident has occurred several times. It must not be forgotten, however, that the tubes were of an earlier pattern (Waxham, Chicago *Medical Journal and Examiner*, November 25th; Eichberg, Cincinnati *Lancet and Clinic*).

The shape of the head, the resistant nature of the vocal cords, and length of tube prevent a repetition of the accident when the latest style of tubes are used.

Dr. Brothers, at my suggestion, has kindly made the following experiment in the dead-house: "The smallest-sized tube was introduced into the larynx of a child five years of age and an incision made in the trachea. Making traction below it was found that considerable force was required to pull the head of the tube below the vocal cords; it was impossible, however, to force it below the cricoid cartilage."

5. *Entrance of food into* bronchi and thus cause "schluck pneumonie." Discussed further on.

6. Cause ulcerations and possible hemorrhage. "The head or shoulder of tube does not rest upon the vocal cords, but just above them on the ventricular bands. There is not any ulceration of the cords, but slight ulceration may be produced by the head and lower end of the tube, when retained for a long time." This does no harm.

7. May give rise to difficulty in swallowing. Discussed further on.

8. Dr. Hance reports two cases in which there was sudden and complete cessation of respiration, due to excessive secretion of mucus and falling back of tongue, forcing epiglottis over the fenestra of the tube. Relief was afforded by depressing tongue and forcing it forward, in order to remove mucus from throat.

Accidents possible in extraction.—1. May be forced down into trachea. This occurred in Dr. Eichberg's case, the tube being of the old pattern, and necessitated tracheotomy for its removal. No danger of this accident with the latest style of tube.

2. Tube may be firmly fixed by swollen fold of mucous membrane of epiglottis or ary-epiglottic folds (œdematous); pushing it aside by finger made removal possible (Caillé). Similar condition found at autopsy in one of Dillon-Brown's cases (THE MEDICAL RECORD, April 10, 1886).

3. Possible aspiration of food into bronchi during vomiting while extraction is attempted. Occurred in one of my cases, the little patient having eaten a very hearty meal shortly before. Did no harm in this case. Would advise, however, that but little nourishment be allowed for several hours prior to extracting tube.

In extracting, try to sink the forceps deeply into the tube and thus secure a firm hold, otherwise they may slip as the handle of the extractor is carried downward. It is well, therefore, to keep the left index-finger in contact with the shoulder of the tube, so that its removal may be accomplished by the finger if the forceps slip after the tube has been raised out of the larynx (the child being inclined forward at same time).

Removal of tube.—1. The tube may be removed as early as the fourth, fifth, or sixth day; exceptionally it may be necessary to allow it to remain ten or eleven days. O'Dwyer's tube can be dispensed with much more readily and earlier than the tracheotomy-tube. This is due to the fact that more or less membrane is detached from the larynx when the tube is introduced.

2. The frequent forcible and explosive cough assists in dislodging and expelling mucus and shreds of membrane.

3. The presence of the tube must of necessity cause more or less disintegration of the false membrane with which it is in contact.

[1] The doctor states that "during the evening the child breathed noisily, as though there were a good deal of mucus in the tube, but apparently without any impediment to respiration. At 10 P.M. she had a severe fit of coughing, and, according to her mother's account, choked up and died in about two minutes."
The noisy breathing in the case is to me an indication to remove the tube temporarily. If this had been done the membrane no doubt would have followed removal of the tube, and the untoward result might have been avoided.

Table of Cases.

Case.	Age.	Diphtheritic patches on	Complications.	Degree of stenosis.	Tube removed.	Relief to dyspnœa.	Recovery.	Cause of death.	Operator.	Remarks.
1	1 year.	Tonsils and pharynx.	.....	Advanced.	.....	Complete.	.....	Heart-failure 18 hours later.	Emergency call.	Tube coughed up; reintroduced.
2	2 years.	Fauces.	.....	"	.....	.....	.....	Sepsis 6 hours later.	Dr. Denhard assisting.	
3	2 yrs. 8 mos.	Nares and pharynx.	.....	"	7th day.	Complete.	Recovery.	.....	Drs. Neufield and Mauson.	
4	6 years.	Nares and tonsils.	Measles.	"	6th day.	"	"	.....	Dr. Neufield.	
5	3 yrs. 8 mos.	Nares and tonsils.	.....	"	.....	"	.....	3½ days later pneumonia and nephritis.	Dr. Denhard assisting.	Tonsils very large; intubation difficult in consequence.
6	3 years.	Tonsils and pharynx; membraneg ganrenous.	Measles.	"	.....	Partial.	.....	Uræmic convulsions 6 hours later.	Dr. Neufield.	
7	2 yrs. 2 mos.	Tonsils and pharynx.	.....	"	6th day.	Complete.	Recovery.	.....	Dr. Neufield.	Child had eaten a hearty meal, and each attempt at removal of tube induced vomiting; fearing that food might enter larynx, I waited until stomach was empty and then removed tube without much trouble. Brandy and caffein injected.
8	3 years.	Nares and pharynx.	Old mitral endocarditis.	"	"	.....	"	.....	Drs. Neufield and Mauson.	Brandy and caffein were injected on account of weak and irregular pulse. As the patches had disappeared, tube removed on sixth day. Child comfortable. Two days later was called again (Dr. Denhard kindly seeing case with me), and found recurrence of stenosis; the ary-epiglottic folds felt swollen and rounder than normal. Again intubated, with immediate relief, and 3 days later tube removed, a pneumonia having developed in the meanwhile. Upon close questioning found that patient was allowed to sleep in a crib near the door, thus accounting for the laryngeal complication and the pneumonia. Two months later was presented at Dr. Jacobi's clinic.
9	2 yrs. 6 mos.	Tonsils and pharynx.	Measles.	"	5th day.	Complete.	.....	6 days afterward pulmonary œdema, secondary to Bright's disease.	Dr. Berlinger.	Comfortable until morning of fifth day, then rise of temperature, dulness at left apex, suppression of urine, and pulmonary œdema.
10	1 year.	Tonsils.	.....	"	Tube coughed up on 4th day.	"	Recovery.	.....	Dr. Horn assisting.	Case seen by Dr. Schlessinger, who confirmed diagnosis and regarded case as hopeless if operative measures were not resorted to.
11	2 yrs. 6 mos.	Nares and fauces.	.....	"	.....	Fair.	.....	4 hours later sepsis.	Dr. Schlessinger.	Child moribund when seen.
12	11 months.	Tonsils.	Measles two weeks before.	"	.....	Complete.	Recovery.	.....	Dr. Denhard assisting.	
13	15 months.	Nares.	Measles and gastro-enteritis.	"	.....	"	.....	Exhaustion 12 hours later.	Dr. Wilson.	
14	18 months.	Nares and pharynx.	.....	"	.....	"	.....	Pneumonia 2½ days later.	Dr. V. Rottenburg.	
15	3 years.	No patches visible; membrane coughed up.	Measles a short time ago.	"	5th day.	"	Recovery.	.....	Dr. Lilienthal.	
16	4 years.	Tonsils and soft palate.	.....	"	"	"	"	.....	Dr. Brugman.	Tube coughed up; saw case 3 hours later with Dr. Denhard. Symptoms of stenosis extreme. A larger tube (5–7 years) was then introduced and retained.
17	2 years.	Nares and pharynx.	.....	"	.....	"	.....	2½ days later pneumonia.	Emergency.	
18	3 years.	Nares and pharynx.	Hemiplegia.	"	.....	"	.....	3 days later sepsis.	Dr. Naughton.	Child had had some brain trouble during the summer, resulting in left hemiplegia. General condition poor.
19	18 months.	Nares and pharynx.	.....	"	.....	"	.....	2 days later pneumonia.		
20	11 months.	Nares and pharynx.	.....	"	.....	"	.....	2 days later sepsis.		
21	2 yrs. 8 mos.	No patches visible; pieces of membrane coughed up later.	Measles one week ago; pneumonia present.	"	11th day.	"	Recovery.	.....	Dr. Denhard assisting.	Seen 3 days before intubated by Dr. Jacobi, and diagnosis of membranous laryngitis confirmed. Tube removed on sixth day, but necessary to reintroduce it 15 minutes later. Great difficulty in nourishing the patient; resorted to stomach-pump.
22	8 months.	Nares and pharynx.	Pneumonia.	"	.....	"	.....	18 hours later heart-failure.	Dr. V. Rottenburg.	
23	4 yrs. 6 mos.	Membrane coughed up.	Measles short time ago.	"	7th day.	"	Recovery.	.....	Dr. Denhard assisting.	This patient is a sister of Case 21.
24	2 yrs. 8 mos.	.....	Measles.	Marked.	Coughed out on 4th day.	"	.....	Died 36 hours after tube was coughed out; pneumonia.	Dr. Lyttle.	Dr. Lyttle writes that intubation was a success as far as the relief of the stenosis was concerned.
25	3 yrs. 6 mos.	Tonsils and pharynx.	.....	Advanced.	Coughed out on 6th day.	"	Recovery.	.....	Dr. Neufield.	Child not seen by Dr. Neufield until patient was nearly moribund. Injected brandy and caffein, and then intubated.
26	10½ months.	Tonsils, soft palate, and pharynx.	.....	"	4th day.	"	"	.....	Dr. Denhard assisting.	Pneumonia developed after 48 hours; temperature at highest, 105°; ran usual course, and patient recovered.
27	2 yrs. 10 mos.	Tonsils, pharynx, and soft palate.	.....	"	.....	"	.....	2 days later secondary croup.	Dr. Brothers assisting.	
28	3 years.	Membranes gangrenous.	Septic case.	"	.....	Partial.	.....	Sepsis.	Dr. J. Horn.	

TABLE OF CASES.—*Continued.*

Case.	Age.	Diphtheritic patches on	Complications.	Degree of stenosis.	Tube removed.	Relief to dyspnœa.	Recovery.	Cause of Death.	Operator.	Remarks.
29	4 yrs. 6 mos.	Tonsils and pharynx.	Pneumonia.	Advanced.	6th day.	Complete.	Recovery.	.....	Dr. F. Nordeman, Dr. Brothers assisting.	Prognosis extremely unfavorable in this case. Intubated, with a view to enthanasia.
30	2 years.	Membrane coughed up.	.....	"	.....	"	.....	.....	Dr. J. Horn.	
31	11 months.	Membrane coughed up.	.....	"	8th day.	"	Recovery.	.....	Dr. Teschner.	An older child sick with laryngeal stenosis at same time, but symptoms were not sufficiently urgent to require intubation.
32	13 months.	Tonsils and palate.	Pneumonia.	"	.....	"	.....	Exhaustion 2½ days after.	Dr. Neufield.	
33	9 months.	.....	Measles.	"	....	"	.....	Exhaustion 6 hours after.	"	
34	2 yrs. 6 mos.	Nares.	Measles a week ago.	"	.... .	"	Recovery.	.....	Dr. Brothers.	Tube removed on 5th day; 1 hour later Dr. Brothers reintubated because of recurrence of stenosis, using small tube; 36 hours later it was coughed up and not necessary to insert again.
35	7 years.	Tonsils and pharynx.	.....	"	Coughed up after 64 hours.	"	"	.....	Dr. H. F. Nordeman.	Intubation easily accomplished. Shreds of membrane, etc., coughed up; still respiration is somewhat obstructed, and it was evident that membrane had been forced down. Tracheotomy not allowed, and no forceps accessible. Gave pure brandy (3j.), causing severe paroxysm of cough, with expulsion of tube and large piece of membrane. Intubated again; relief complete.
36	3 yrs. 6 mos.	Nares and pharynx.	.....	"	.....	"	.....	Secondary croup 2 days later.	Dr. Neufield.	
37	18 months.	Membrane coughed up.	.....	"	....	"	.....	Heart-failure 18 hours later.	Dr. Denhard assisting.	
38	18 months.	Nares and fauces.	....	"	Coughed up on 6th day.	"	.....	Convulsions 10 hours later.	Dr. D. Cook.	
39	9⅚ months.	No membrane visible; pieces coughed up.	.....	"	Removed on 7th day.	"	Recovery.	....	Case of Dr. Neufield, Dr. Denhard present.	
40	2 yrs. 6 mos.	Tonsils.	.....	"	.....	"	"	.....	Drs. Bennett and Neufield.	
41	5 yrs. 6 mos.	Tonsils and pharynx.	.....	"	....	"	.....	Died 6 days later.	Dr. Rottenburg.	
42	2 yrs. 9 mos.	Tonsils and nose.	.....	"	7th day.	"	.....	Died 2 days later of secondary croup.		
43	22 months.	Tonsils; membrane coughed up.	.....	"	6th day.	"	Recovery.	.....	Dr. Horn present.	
44	4 years.	Soft palate and tonsils.	.....	"	.....	"	"	.....	Dr. Horn present.	Referred to me for intubation by Dr. F. Nordeman.
45	3 years.	Tonsils and palate.	Pneumonia.	"	.....	"	.....	2 days later secondary croup and pneumonia.	Dr. Brothers present.	Referred to me by Dr. Lytle.
46	11 months.	Membrane coughed up.	.....	"	.....	"	.....	Pneumonia and secondary croup 2¼ days later.	Dr. H. G. Lytle.	
47	4 yrs. 6 mos.	Pharynx, etc.	.....	"	....	"	.....	Died 3 days later of secondary croup.		

RÉSUMÉ OF CASES.

Age.	Under three years of age. No.	Recovery.	Death.	Age.	Three years of age and over. No.	Recovery.	Death.
8 months....	1	0	1	3 years	6	2	4
9 months....	1	0	1	3½ years ...	2	1	1
9½ months..	1	1	0	3⅝ years ..	1	0	1
10½ months..	1	1	0	4 years	3	2	1
11 months...	4	2	2	4½ years ...	3	2	1
1 year	2	1	1	5½ years .	1	0	1
13 months...	1	0	1	6 years ...	1	1	0
1½ year	1	0	1	7 years	1	1	0
1¾ year	4	0	4				
2 years	5	2	3				
2½ years	4	2	2				
2⅝ years ...	4	2	2				
Total.....	29	11	18	Total.....	18	9	9

Twenty-nine were under three years of age, 11 recoveries; 18 were three years old or over, 9 recoveries. Other points of interest will be developed later on.

4. When an intubation-tube is in position reflex spasm can no longer take place—the diseased structures are kept apart and *at rest*.

I do not forget that after a tracheotomy the membrane below the opening, even though recent, is apt to be expelled as soon as the trachea is opened or the tube inserted; that upon the vocal cords and in the larynx—and *here* is the point—is not thrown off for from six to sixteen days or more in a patient upon whom tracheotomy has been done. Though the greater amount of air enters the lung through the tracheal cannula, some air passes through the larynx and alongside the tracheotomy-tube; the laryngeal structures are more or less active, and are not as quiet as when separated by the intubation-tube.

5. Granulations are of frequent occurrence after tracheotomy, and require to be removed before the cannula can be dispensed with. They do not form after intubation; if ulceration be produced, the ulcers are superficial and soon heal.

As long as the respiration is obstructed and expectoration free, there is no occasion for the removal of the tube until five or six days have elapsed. If, during this period, the breathing becomes noisy and does not become quiet after the subsidence of a paroxysm of cough purposely induced by the ingestion of lime-water, etc., or if it be suspected that membrane be loose, and there is danger of obstruction, the tube ought to be taken out, to permit removal of the obstacle, and then reintroduced, if necessary.

I do not favor its frequent removal, nor is it necessary for the purpose of allowing the patient to take nourishment. It is safer and easier to insert the stomach-tube, through the mouth or nares, and thus nourish the child. We must not forget the danger of crowding membrane down in the reintroduction of tube.

When diphtheritic patches are visible upon the tonsils,

pharynx, or in the nose, I generally wait until they disappear before the intubation-tube is permanently removed. No membranes being present in the fauces, it is well to remove the tube at the end of five or six days; if the dyspnœa return, the tube can be reintroduced at once or after the lapse of a few hours. The hoarseness and aphonia which persist when tube is removed yield to general treatment in from one to three weeks.

The prognosis in intubation (and this applies to tracheotomy as well) is better when the evidences of general infection are mild or wanting; when the operation is done in cases in which the symptoms of asphyxia predominate, and the local lesion—the membranous deposits in the larynx—constitute the main danger to the patient. It is unfortunately true that in many instances it is not always possible, amid an aggregate of symptoms, often very complex, to distinguish perfectly the symptoms due to the local trouble in the larynx and those due to the sepsis or other complication. In view of the simplicity of the procedure and the comparative ease and rapidity with which it can be done, I have often intubated (the stenosis being sufficiently well marked to warrant it) regardless of the tender age and no matter how hopeless the cases from septic or other complication, the object being to allow the child to breathe more easily and to render its condition more comfortable, to prevent asphyxia with its struggles and suffering.

No positive prognosis can be given until forty-eight hours at least have elapsed. Though the dyspnœa be relieved, the membrane may extend downward, pneumonia set in, cardiac failure occur, systemic infection take place, and paralysis, nephritis, or heart-clot render the prognosis bad. If no marked elevation of temperature occurs and the respirations do not become accelerated during the first two or three days, the case will probably pursue a favorable course. Exceptionally a nephritis or late pneumonia will cause a fatal termination after the fifth or sixth day.

Intubation relieves the stenosis and keeps the larynx patent, so that air can gain free access to the lungs. It is thus a symptomatic expedient, so to say, resorted to, not with a view to cure the disease itself, but rather to overcome the obstruction to respiration. This should not be forgotten. We still have to deal with a serious disease and must meet other indications as they arise. What medicines are to be given? Dr. Northrup answers, "Milk and whiskey." He further adds: "I have occasionally found my tubes well corroded when enthusiasts in bichloride treatment and advocates of iron have been hard to manage." At the risk of corroding my tubes and being included among the "enthusiasts," I would state that I continue the use of the "bichloride" throughout the disease.[1]

If there be extensive diphtheria of the fauces, iron and chlorate of potash are indicated. If the nares be involved, nasal injections are resorted to. If other symptoms arise, the appropriate remedies are prescribed. In cases of threatened heart-failure, hypodermics of brandy, ether, camphor, caffein, etc., may be employed. High temperature is treated by antipyretics either by mouth or suppositories.

By means of Spencer's steam atomizer, steam is kept up continuously. Alcoholic and other stimulants are not to be neglected.

Alimentation is of primary importance in this as in any other severe affection. Disgust for every article of diet is a very unfavorable symptom. As a rule the little patients will not take food well from parents or friends, and whenever possible it is advisable to insist upon the presence of a good nurse. Even then personal supervision should be exercised, and precise directions left; too much latitude should not be given, or much left to the discretion of the attendant not familiar with the requirements of the case. The proper preparation of the food ought to be looked into by the physician. I have frequently been told that it was impossible to administer anything to the child. Sitting down by the bedside and personally attending to the feeding, I have been able to make the child take a reasonable amount of nourishment, either by threats of punishment, insertion of gag, force, or bribery. Trousseau very truly says: "There are no rigid rules in respect to the choice of food. We are often obliged, in some individuals, to satisfy the strangest possible caprices of taste." Some five years ago I performed a tracheotomy in a case of whooping-cough complicated with membranous laryngitis. Cyanosis was so far advanced that the operation was practically done without an anæsthetic. The boy, of Russian-Polish parentage, absolutely refused milk, stimulants, and usual articles of diet. Any attempt to force him would provoke him to such an extent that he would tear his hair, toss about wildly, and have a severe paroxysm of cough, often bringing up considerable quantities of blood. I was finally compelled to allow him to have his own way and to permit him to select his own dietary, his favorite dish being a compound composed of dried pears, carrots, potatoes, and meat stewed together. Of this he would eat two or three heaping soup-platefuls daily. The boy recovered. I mention this case, which is exceptional, merely to show that rigid rules cannot always be carried out, and in rare instances a departure from well-established precepts may not be attended by any untoward consequences. If after repeated attempts to give proper food I fail, I do not hesitate to allow the little fellow full latitude as regards his diet, provided rectal feeding be not possible and a resort to the use of the stomach-tube (through nose or mouth) be attended by marked prostration.

For several hours after the tube has been introduced nothing should be allowed but small pieces of ice dipped in brandy or wine. These will be readily taken and will not induce coughing to any extent. At the next visit (three to four hours later) the physician should make it a rule to endeavor to discover how much fluid can safely be allowed at a time. Solids and semi-solids will be swallowed without much difficulty. Fluids, however, provoke considerable coughing. We must remember that the epiglottis is only an accessory to the closure of the larynx, and that the other more important factor, the action of its constrictor muscles, is prevented by the presence of the cannula; it is therefore evident that the deglutition of fluids can never be perfect with any form of tube in the glottis. If the head of the tube be too large, or ride too high in the larynx, the difficulty is greater.

It is my practice to sit by the bedside and endeavor to discover the idiosyncrasy of the little patient as regards the ability to swallow fluids. I begin with a teaspoonful of brandy and milk; if this be swallowed well, the nourishment is continued in teaspoonful doses, or larger amounts if well tolerated. If much cough follow, the quantity is diminished; in some instances but ten to twenty drops can be taken, and are then to be given by means of a medicine-dropper. This frequently happens in very young children, in such under eighteen months. In the case of older children we may allow them to sit up and take their food slowly from a cup or spoon—in fact, permit them to feed themselves as much as possible.

Medicines may be administered in the same manner. It is far preferable to gauge the patient's ability to swallow than to allow him to take indefinite amounts, which are coughed up as soon as taken, and only tend to add to the discouragement and torment of the little one.

[1] The deductions of Thallon (New York Medical Journal, April 12 and 19, 1884) prove not only that the bichloride is a proper antifermentative, but also that the doses must be larger than usually recommended. Following the teachings of Jacobi (THE MEDICAL RECORD, May, 1884), I have kept these patients under the influence of mercury. From one-sixth to one-half and even a grain (according to the urgency of the symptoms and age of child) may be given in divided doses in twenty-four hours, and continued for a number of days without producing any untoward results. The medicine is continued even after intubation; and when the difficulty in swallowing is great, tablet triturates of bichloride, one-fortieth of a grain, are powdered and mixed with a small amount of sugar and placed dry upon the tongue, ice being given at the same time to facilitate solution and prevent the drug reaching the stomach in too concentrated form.

Solids and semi-solids are better taken than liquid when there is pain and difficulty in deglutition, as they do not provoke coughing to the same extent. Thick soups, farinaceous food with milk, chocolate, cream, soft-boiled or scrambled eggs, frozen or condensed milk undiluted, may be allowed. Ice-cream, water-ice, and jellies of various kinds, with or without wine or brandy, may be tried. To children a year or so of age I have given rice, barley, or oatmeal water, cooked thick and strained, with white of egg and milk, a little salt and sugar being added to make it more palatable.

Rectal nutrient injections I have used in one or two cases; in only one case was I compelled to use the stomach-tube (Davidson syringe and Jacque's catheter).

Dr. Caillé and others, in order to lessen the dangers of pneumonia or pulmonary complications from the possible entrance of food into the trachea, advise rectal alimentation or feeding by the stomach-tube (THE MEDICAL RECORD, March 19, 1887).

This, in my opinion, is going too far. If the hints thrown out above are followed, I do not think that feeding by mouth will add materially to the danger of pneumonia in this class of cases. Furthermore, we must remember that pneumonia complicating diphtheritic laryngitis is a rather frequent occurrence and is usually a broncho-pneumonia and results from rarefaction of the air in the respiratory passages during the period of impeded respiration, with consequent collapse of pulmonary tissue and dilatation of blood-vessels, and hence a disturbance of the circulation. . . . Lobular pneumonia will result from the aspiration of pieces of membrane into the smallest bronchi. . . . Second form of pneumonia is from the beginning of a fibrinous character (Jacobi). The danger exists, I admit, but is greatly exaggerated, and I have not been able to find the records of a single case in which, at the autopsy, the pulmonary inflammation was found to be due to the aspiration of particles of food into the bronchi after intubation.

In the first few cases Dr. Denhard, misinterpreting the directions, inserted the tubes so that the bevel of the flange looked upward and forward, and in these instances the curious fact was observed that the patients could swallow very well. A number of gentlemen in Chicago have had a similar experience, and the reversed position is preferred by many, among them Professor Hoadley. The latter maintains that the flange of the tube, as placed by him deeply in the vestibule of the larynx, in no wise interferes with the functions of the epiglottis or the ary-epiglottic fold. Its removal, however, is attended with considerable difficulty. In order to test this further Dr. Denhard has lately introduced the tube in the reversed position and the patient was able to swallow with facility and comfort.

In this connection it may be well to refer to Dr. Waxham's modification of O'Dwyer's tubes, devised to overcome the difficulty of nourishing the patient. They are made with smaller heads and are provided with a rubber collar with an artificial epiglottis attached. The collar projects sufficiently to prevent the tube slipping into the trachea, and being more elastic, fits more perfectly into the larynx than the large metalic heads. When the child swallows, the epiglottis presses the artificial epiglottis down, so as to completely cover the aperture of the tube. As deglutition ceases the larynx falls and the elasticity of the rubber throws the artificial epiglottis upward. Even with this addition the deglutition of liquids is not perfect; some enters the larynx.

The pertinent question has been asked, Does intubation leave the patient without any of the advantages offered by tracheotomy?

In my experience and that of others who have given the new plan a faithful trial, intubation secures to the patient every advantage afforded by incision of the trachea. The insertion of an O'Dwyer's tube relieves the stenosis as promptly, thoroughly, and efficiently as tracheotomy. Expectoration is more readily accomplished after intubation, for the ability to close the glottis is preserved, the cough consequently is explosive and full, and the mucus and shreds of membrane are readily brought up.

Furthermore, intubation will save many lives in cases in which tracheotomy would not be permitted; it will save many a patient from the need of tracheotomy; and "finally, it will save many that could not be saved by tracheotomy." The last applies particularly to children under three years of age. Fifty-two of Waxham's cases (up to December 14, 1886) were three years or under, a great many nursing infants, with 13 recoveries (twenty-five per cent.). Among the recoveries were 1 nine months old, others respectively, fourteen months, eighteen months, and twenty-two months of age (*Med. News*, January 1, 1887).

My own cases comprise 29 under three years of age with 11 recoveries, including one nine and one-half months old, one ten and one-half months, two eleven months, and one one year old.

I have endeavored, to the best of my ability, to bring before you a faithful view of the subject under consideration, to give the dark as well as the light sides, to present the advantages as well as the imperfections of the measure. The picture may be rose-colored, but my experience warrants the favorable and even enthusiastic view I have taken. I have seen child after child die of laryngeal obstruction in instances where tracheotomy was objected to, and of twelve cases in which I have operated, ten have died. I have furthermore assisted at the operation and more or less closely followed the after treatment of at least a score of cases in the practice of various friends. The results have not been brilliant or encouraging. It is thus evident that I do not reject the cutting operation upon theoretical grounds or insufficient experience. I appreciate the relief afforded by tracheotomy and have urged its performance in spite of discouraging results. Intubation affords relief as effectually and as thoroughly as tracheotomy. Moreover, it is a simpler and safer method. "The child is swathed, the gag is in, the tube is in, the thread is out, the gag is out, and the relieved and bewildered child is looking about, coughing, quite unable to comprehend the surroundings." Those who have witnessed the operation of intubation recognize the truth of the above and appreciate the benefits and advantages as well as the simplicity of the procedure. Many authorities, without any familiarity with the measure and without a proper study of the subject, condemn the plan and attempt to discredit the assertions of its advocates. The objections are theoretical.

Edmund Owens ("Year-Book of Treatment for 1886," page 164) concedes that he "neither has nor desires a practical acquaintance with it," and yet condemns the method. Michael, of Hamburg, says the method is as dangerous as it is impracticable. Thus far it has not met with much favor in England or on the continent.

In concluding, it is but just that we acknowledge the debt of gratitude we owe to our *confrère*, Dr. James O'Dwyer, considered by Jacobi the most deserving and most modest of all men. The patient, painstaking, and unostentatious manner in which he has conducted his experiments and investigations deserve due recognition at our hands. The perseverance, ingenuity, and originality shown in perfecting the method merit our admiration. The disinterestedness, candor, and modesty, so characteristic of the man, and which stamp his references to this invaluable addition to our resources in the treatment of croup, cannot be extolled too highly, and deserve more than mere praise or words of fulsome flattery. Finally, I heartily indorse the sentiment expressed by Dr. Ingals and join "in acknowledging the nobleness of the profession at large which tolerates no secret method, but generously donates to mankind every improvement in the healing art." Among the latest, but not the least, may be classed intubation, rightly considered as "one of the great advances in this age of medical discoveries."

FEEDING AFTER INTUBATION OF THE LARYNX.

With Exhibition of Tubes Modified to Overcome Difficulty in Feeding.

By JOSEPH O'DWYER, M.D.,

ATTENDING PHYSICIAN TO THE NEW YORK FOUNDLING ASYLUM.

From the very beginning of my experience with intubation I recognized the fact that the greatest objection to this operation, and the one most difficult to overcome, was that of feeding the child while the tube remained in the larynx. I therefore began very early to try various modifications in the size and shape of the heads of the tubes with a view to remedying this defect. I will show you a few of these modifications in the order in which they were made.

1. I first had the tube made with a very small shoulder which rested on the vocal cords, while the lateral portions of the flange occupied the ventricles, thus permitting some action of the constrictors, such as occurs under normal conditions, to aid the epiglottis in protecting the larynx during the act of deglutition. The objection I found to these small-headed tubes was the tendency of the swollen tissues to close over the aperture above, and there was also the danger that the tube might be pushed through into the trachea during attempts at extraction.

2. My next modification consisted in gradually increasing the size of the head and giving the upper portion of the tube a backward curve in order to carry it away from the base of the epiglottis, at which point the straight one frequently produced ulceration.

3. The posterior portion of the tube was made longer than the anterior, or oblique from before backward and upward, in order to allow the epiglottis to come in contact with it sooner and with greater force when pressed down by the base of the tongue.

4. The next modification was to increase the size of the head so as to make it fill the cavity of the larynx and thus prevent the entrance of fluids around it, for cough will be excited by contact of a foreign body with any portion of the mucous membrane of the glottis. The heads of the tubes now made are much larger than is necessary, but as deglutition, if no better, is certainly no worse, I have not changed them for the reason that the large head renders the extraction less difficult.

5. The head of the tube was now made concave on its upper surface. This shape was suggested by taking a wax cast of the larynx and pressing the epiglottis over it while the wax was still soft. The impression made on the wax was similar in shape to that which you see in this tube. I have used this modification in a few cases, but without witnessing any apparent improvement in deglutition. Should it not prove otherwise objectionable on a more extended trial, this form of head may be an advantage, as it would render the removal of the tube, which is now the more difficult operation, much easier than its introduction, for the extraction, striking anywhere on the concave surface, would naturally and easily glide into the aperture.

6. In some cases a double backward curve has been given to the upper portion of the tube, the first curve being covered by the flange and the second being a little lower down. This has been used in several cases, but I have not seen any improvement in deglutition to result therefrom.

This shape is advantageous, however, in one respect. Autopsies were made in three cases in which these modified tubes were used, and not the least abrasion was found on the anterior wall of the trachea, at the point corresponding to the lower extremity of the tube, where more or less ulceration is not uncommonly produced by the tubes ordinarily used. This ulceration is sometimes quite marked in cases in which the vital powers have been much reduced by a previous attack of scarlet fever or measles or both, and is produced in the following manner: A tube in the larynx acts as a lever, with the posterior commissure as a fulcrum. During every act of deglutition the epiglottis presses the upper short arm of the lever backward and tilts the lower long arm forward against the wall of the trachea. First, the pseudo membrane disappears for about one-fourth of an inch above and below the end of the tube. I have seen many cases in which this alone occurred, and others in which the lesion varied from simple loss of the epithelium to pretty extensive ulceration. Several years ago, when I was using short tubes, from one to one and one-half inch in length, and of larger calibre, I never found ulceration in the trachea, but this lesion was present in almost every case just below the vocal cords in the subglottic division of the larynx.

I also show you one of Dr. Waxham's modified tubes with rubber epiglottis, which I have not yet tried.

With all these modifications, and others that I have not mentioned, I have found about the same difficulty in the swallowing of fluids, some of which, when compressed by the muscles of deglutition, will be forced under the epiglottis, no matter how accurately it covers the aperture of the tube.

There are still other modifications that I intend to try, and as other men are working in the same line, there is reason to hope that some device will yet be found to overcome this difficulty.

Solids and semi solids, when there is an appetite for such food, and when the patients can be induced to take it, are swallowed much better than fluids and do not enter the tube, as far as I am aware. Indeed, there is no reason why they should do so, for a bolus of food as it passes downward tends rather to press the epiglottis more firmly over the mouth of the tube than to raise it, as happens in the case of fluids. I make an exception to this statement in the case of malignant diphtheria of the larynx, a few cases of which I have operated upon, in which the epiglottis is converted into a mass of an almost globular shape by reason of the infiltration into its tissues, whereby its normal functions are completely abolished.

Some children swallow remarkably well after intubation, others very imperfectly, while a few refuse absolutely to swallow anything. This difference is to be explained partly by the condition of the epiglottis, whether very much swollen or not, and partly by the absence or presence of a desire for food. I have often known children to refuse milk or any other kind of nourishment, when they would drink water, beer, or anything that they liked, with very little difficulty. On several occasions I have removed the tube for the purpose of giving nourishment, but found that the patients could not be induced to take food any better than before. This occurs more frequently in cases of severe complicating nephritis which occasions nausea and a loathing of food.

There is sometimes an apparent improvement in swallowing after intubation, and more nourishment is taken than before the operation. This is due to the relief of the dyspnœa, which, before the insertion of the tube, was so urgent that the little sufferer could not afford the loss of the one or two respirations that would be necessitated by making a single act of deglutition. As a rule, the longer the tube remains in the larynx the better the patient learns how to swallow. I have observed this in adults as well as in children. One woman declared after intubation that she could not swallow anything in either solid or liquid form, and it was necessary to feed her by the stomach-tube. After the laryngeal tube had been retained for two or three weeks she took as much food as the stomach would tolerate and, in addition, large doses of iodide of potassium.

Exceptions to this rule are found in those cases in which, before intubation, nourishment was refused because of the painful condition of the pharynx, or because

of anorexia induced by nephritis, and in others in which a great deal of pain and irritation, caused by ulceration on the anterior wall of the trachea, previously alluded to, are present.

I always instruct children who are old enough to understand, to drink as rapidly as they can and then cough to expel any fluid that may have entered the tube, instead of coughing after each deglutition as they usually do. In quite a number of cases I have been obliged to supplement feeding by the mouth by rectal alimentation, with or without stimulants, as indicated. In only a few have I had to resort to the stomach-tube.

Intimately connected with the question of feeding after intubation is that of food-pneumonia, so much talked about of late. I will first refer briefly to the most important factors concerned in the causation of pneumonia as a complication of croup, and will then give some reasons for believing that food is not one of them. The several etiological factors may be grouped as follows:

1. The presence of secretion in the lower air-passages, in consequence of the frequent association of bronchial catarrh and croup.

2. The excessive amount of blood drawn to the lungs when there is sufficient obstruction in the larynx to prevent the free ingress of air required to fill the vacuum produced by the inspiratory expansion of the chest.

3. Atelectasis from the same cause or from plugging of some of the bronchi by pseudo-membrane.

4. The presence of a tube, whether it be in the larynx or in the trachea, not because it may admit a little of the milk or other fluids swallowed, but because it prevents closure of the glottis, and consequently prevents that compression of the air which is essential in order to give full expulsive power to the cough. The irritating secretions, therefore, instead of being promptly expectorated, accumulate, and are aspirated into the air-cells, where they sooner or later excite inflammatory changes.

When we consider the nature of these influences, some of which are constantly present in severe cases, it ought not to be surprising to find pneumonia, especially of the lobular form, a rather frequent complication of croup. And this is particularly so after operation, whether by tracheotomy or intubation.

As opposed to the food-pneumonia theory, I offer the following:

1. I do not believe, and there is no evidence, so far, to prove, that any of the fluid entering the tube ever reaches the bronchi, for it is promptly expelled by coughing.

2. Those cases in which the croupous process does not invade the bronchi, and in which there is little or no bronchial catarrh, no matter how imperfectly they swallow, rarely, if ever, develop pneumonia.

3. Intubation in chronic stenosis of the larynx, in the adult, is not followed by any inflammatory changes in the lungs. In one case of this kind I have already introduced a tube over fifty times, leaving it in the larynx on several occasions as long as a week at a time. This patient, owing partly to a deformity of the epiglottis, swallowed both solids and liquids very imperfectly, but never developed even the slightest amount of bronchitis. Another female patient, who had worn a tracheal cannula for over two years and who was in failing health and suffering from bronchitis at the time that she was intubated, rapidly improved after the tube was inserted into her larynx, and the external wound was closed. The bronchitis also disappeared within a reasonable time. This patient wore the tube in her larynx continuouslyfor over ten months, and enjoyed excellent health during the entire time.

There is no objection to the use of emetics, if indicated, after intubation, and there is no danger that the vomited matters will enter the tube, as no resistance is offered to their escape from the œsophagus, such as must be overcome when food or drink enters this canal from the pharynx

Finally, I wish to show you two hard-rubber tubes which are suitable for use in any form of acute stenosis of the larynx in the adult. The larger is intended for a large adult male, the smaller for a small-sized or young adult male, or for a female. Whether they will be any improvement on the metal tubes that I have been using remains to be settled by a more extended trial. I have used the smaller of these in two women, who had previously worn metal tubes of a much smaller calibre. One of the patients expressed a decided preference for the heavy tube, which, she said, sank deeper in the larynx and enabled her to swallow more easily than did the light-rubber tube. But although one weighed one ounce and three-quarters and the other only one hundred grains, she could not appreciate any difference in the weight as it was in position in the larynx. The other patient, while she could not swallow as well with it, was equally strong in her preference for the lighter tube, saying that it gave her less pain and irritation, and enabled her to expectorate more easily. These tubes are made by Tiemann & Co.

PATHOLOGICAL ANATOMY OF THE RESPIRATORY TRACT AFTER DEATH FROM LARYNGEAL DIPHTHERIA AND INTUBATION.[1]

By W. P. NORTHRUP, M.D.,

PATHOLOGIST TO THE NEW YORK FOUNDLING ASYLUM.

In my paper read before this Academy in December last (see MEDICAL RECORD of December 11, 1886), entitled "Laryngeal Diphtheria, Intubation, and Pathological Anatomy," etc., I analyzed the cases found in the post-mortem records of the New York Foundling Asylum. There were at that time 87 cases recorded of death from laryngeal diphtheria.

Of these, 50 were males, 37 females. Average age was two years and seven months. Number of children dying under one year, 13; between one and two was 9; two and three, 10; three and four, 36; four and five, 11; five and six, 1; six and seven, 1; unknown, 6—total, 87 cases.

"The greatest mortality, as we see, was from three to four years of age, where we find 36 of the 87 cases. The next number falls abruptly to 13, representing those dying under one year."

In 56 the diphtheria began in the larynx. Of the 87 cases 22 followed measles, 8 followed scarlet fever. In 54 cases there was pneumonia, the diagnosis of which was made either from obvious signs of consolidation, or, where this was not well developed, from the microscopic findings. Not in all cases did there seem to be enough pneumonia to be the cause of death. In 29 cases there was estimated to be enough. In 27 cases bronchial diphtheria was the prominent lesion. I will here repeat that I do not rule out pneumonia, because lung inflates easily by artificial means and returns nearly to its normal color. I am not willing to admit that it is collapse, and not pneumonia, on that test. In cases of doubt the microscope has been used to determine the nature and extent of the lesion, and in the records referred to the diagnosis heading the history and post-mortem records has been made on the anatomical basis.

Since January 1, 1887, there have been added to these records 20 cases, making in all 107. These will be interesting and instructive, because they are all cases of laryngeal diphtheria occurring in a fatal epidemic of measles. Of the 20 cases all had measles and pneumonia; 8 had scarlet fever with measles; and 13 had, in addition, well-marked nephritis. These points are mentioned to show the severity of the epidemic, which in four months has added 20 cases to the former record.

I said in my paper that I had never found any ulcers of the trachea which were more than a rubbing away of

[1] Read before the New York Academy of Medicine, June 2, 1887.

the epithelium. I have this evening to show you the lesions of a severe epidemic, in which the patients have been overwhelmed with scarlet fever and measles and pneumonia and nephritis and diphtheria. On these glass slides are shown the ulcers in gross, from four tracheas, which ulcers, you will see, extend in depth to the rings of the trachea, laying them bare. The lower end of the tube, at each movement of swallowing, rubs against the anterior wall of the trachea. In this severely fatal epidemic we find what we did not in previous cases, viz., deep ulcers. Of the 20 cases 5 had tracheal ulcers deep enough to be of serious moment. I have never seen ulcers made by the head of the tube worthy of consideration. It amounts simply to necrosis of the epithelium, and will heal without contraction.

One of the first questions to be asked is whether or not milk, which occasions cough, passes into the finer bronchi and alveoli and causes pneumonia—foreign-body pneumonia, aspiration pneumonia, *schluck pneumonie.* I may answer, briefly, I have never found any evidence that it did find its way into the finer bronchi. I am familiar, too, with the article of Orth, of Göttingen, recently published, and I find nothing corresponding to his description.

I am endeavoring by experiment to determine how far the fluid passes downward into the air-passages. Fluid bathing simply the under surface of the epiglottis may cause violent cough. The experiments are in this line. By some means register the depth to which the fluid descends, either by harmless staining-fluids or by finely divided carbon suspended in milk. Thus far I have no results to publish.

This paper has but two points to add to that of December on this particular feature of the discussion.

First, after all that has been suggested on the subject, I find no evidence that milk, or food of any kind, has passed into the finer bronchi and alveoli of patients wearing the laryngeal tube.

Second, that in patients the subjects of previous exhausting disease the lower end of the tube may cause ulceration, even when worn the usual number of days. This ulceration may easily amount to a complication.

CONTRIBUTION TO THE DISCUSSION ON INTUBATION OF THE LARYNX.[1]

By A. CAILLÉ, M.D.,

NEW YORK.

I WISH to state at the onset that we cannot this evening speak a final word as to the actual merits of intubation.

It is true that a large number of cases are on record, but it is equally true that many of these cases are reported in a superficial manner, and therefore lose their value as statistical material.

I must confess that Dr. Huber and Dr. Brown have presented their cases in a manner calculated to inspire confidence in the conclusions which they formulated.

I believe, moreover, that it is a good plan for those who have had experience with both tracheotomy and intubation to come together occasionally and compare notes; and taking this view, I will briefly state my own experience.

I have done tracheotomy 21 times, with 5 recoveries. I have intubated 16 times, with 6 recoveries. Of the intubated cases 9 were cases of nasal or pharyngeal diphtheria and laryngeal stenosis, with 2 recoveries; 6 were cases of true membranous laryngitis, and no visible diphtheritic exudate on fauces, with 3 recoveries; 1 case was probably a severe simple inflammatory stenosis of five days' standing, which had not improved under ordinary treatment, with very urgent dyspnœa, 1 recovery.

Most of these cases were seen in consultation, and intubation was done rather late, and I am convinced that without active interference every one of these children, whose ages ranged from one to seven years, would have died of suffocation.

I believe that I would be able to report at least one more recovery if intubation had been done earlier in one case, for breathing had actually ceased and artificial respiration had to be practised.

My best results in intubation were obtained in cases of undoubted membranous laryngitis, in which diphtheria of fauces was not visible at the time of intubation.

Now this is quite the reverse of my experience with tracheotomy, for most of the children operated upon for true membranous laryngitis died from an extension of the membrane into the finer bronchi, and it made apparently no difference whether the trachea was incised above or below the thyroid gland. The cause of death in such patients as did not recover after intubation was, in the majority of cases, catarrhal pneumonia. In most of the fatal cases I gave some liquid nourishment, which may have provoked pulmonary inflammation through being aspirated. Of late, I have given only solids, chopped very fine and moistened, and small pieces of ice to quench thirst; since that time my results are much better.

One case deserves special attention. I intubated a child, one year old, with extreme stenosis but no visible diphtheria. I removed the tube every other day to feed the child, as it could not swallow, but I was obliged to reintroduce it. On the twelfth day I noticed pharyngeal and nasal diphtheria, and on the fourteenth day, the child died of exhaustion, with the tube *in situ* and the lungs free. If I were asked to express my personal opinion as to the value of intubation, I would say:

1. In *general practice* intubation is preferable to tracheotomy in urgent laryngeal stenosis of children in the majority of cases.

2. When pharyngeal or nasal diphtheria and laryngeal stenosis are present at the same time, intubation should be practised in preference to tracheotomy, when the surrounding circumstances are such as to preclude the possibility of proper and intelligent after-treatment.

3. Tracheotomy is preferable to intubation in such cases of larnygeal stenosis, with pharyngeal or nasal diphtheria, which appear from experience *hopeless*, without *sufficient stimulation and nourishment* and proper local treatment of naso-pharynx, *provided the operation and after-treatment can be conducted under the most favorable surroundings.*

4. These conclusions pertain to intubation with the present style of tube.

[1] Read before the New York Academy of Medicine, June 2, 1887.

COLDS TAKEN IN THE CARS.—In these days when travel by railroad is very common, a few words to the patients on the best means to prevent taking colds in the cars will be useful. For men, a light cap, one that will cover over the ears, so as to serve as a night cap, will be desirable. In cold weather a woollen cap is best. This cap should be put on as soon as the car is entered. A loose blouse should take the place of the coat usually worn. Slippers must not be worn. If there is a draught in the car, face it, do not let it strike the back. Have the bed made with its head toward the engine; the dust will then be driven to the foot, where it will do the least harm. But be sure to have a sufficient quantity of bedclothes to keep warm. A soft, loose-knit, woollen hood is the best head-wear for women; this should be worn at night also. It should be warmer in winter than in summer months. The corsets should be removed at night, and a loose woollen wrapper worn for a night-dress. The stocking supporters as well as every constricting band around the waist should be loosened. Every adult should take from five to ten grains of quinine on going to bed. It will be well to rub the hands, feet, face, and neck with a little vaseline at the same time.—*Journal of Reconstructives*

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THE TREATMENT OF WOUNDS OF THE INTESTINES.

ALTHOUGH American surgeons may have little to learn from abroad concerning the treatment of abdominal wounds involving the intestines, it may not be uninteresting to hear what others have to say concerning it, especially when they are surgeons of acknowledged authority.

At the annual conversazione of the London Medical Society, held on May 2d, Sir William MacCormac delivered the address, taking for his subject "Abdominal Section for the Treatment of Intraperitoneal Injury." Confining his attention almost entirely to wounds of the bowel, the speaker remarked that the diagnosis was of primary importance, as upon its speedy determination must depend the success of our treatment. If we wait till the diagnosis has been established by the occurrence of peritonitis, the services of the surgeon are no longer called for. To clear up the diagnosis he recommended that the wound should be thoroughly examined, precautions being taken to exclude septic influences. If probing fail to clearly establish the fact, or otherwise, of penetration, the wound should be enlarged and explored to its termination, either in the parietes or more deeply. Enterorrhaphy was at the present time admittedly the best treatment for all punctured and incised wounds attended by protrusion, unless the parts were so damaged that an artificial anus seemed preferable. In cases of stabs and gunshot wounds unattended by protrusion, the common practice, heretofore, had been to give opium and enjoin rest, in the hope that adhesions might form. In the vast majority of instances such hopes were illusory. Another practice commonly recommended was the formation of an artificial anus by attaching the margins of the wound in the gut to the skin, but where it was possible to avoid it this course was highly undesirable, and it was certainly unnecessary in those cases in which the injury did not extend more than half-way round the gut, or when it was on the convexity of the bowel.

"In cases of injury," remarked the speaker, "we but half accomplish our work if we do not at once attempt to restore the continuity of the intestine."

Three conditions were enumerated as being required to insure successful suture of the intestine, viz. (1), two sufficiently broad and wide surfaces of peritoneum must be brought into contact; (2) the mucous membrane must be excluded, for when the needle passed through the whole thickness of the gut peritonitis generally ensued from leakage taking place along the line of the thread; (3) rapidity of execution was of extreme importance, and that form of suture was the best which could be effectively employed in the shortest time. Sir William preferred Lembert's method of suture for all wounds of the bowel. Sufficient inversion could be easily accomplished without causing obstruction of the lumen of the tube. To cleanse the abdominal cavity from all blood and foreign matter, the best and gentlest method was, he thought, to employ irrigation with a three-per-cent. solution of boracic acid at a temperature of 100° F., made with water previously boiled. The external wound was to be closed, as after ovariotomy. If the operation were done shortly after the accident, drainage might be dispensed with, but if some time had elapsed, or peritoneal inflammation were present, it would be best to drain.

INSTINCT IN MEDICINE.

A RECENT French writer, M. Delaunay, has discoursed upon the instinct of animals with reference to the care which they take of themselves in emergencies arising from physical injuries. He adduces many interesting facts, some of which are familiar, while others are new and exceedingly novel. For instance, he notes that dogs suffering from gastro-enteric troubles, due to improper food, eat certain grasses which have a purgative effect, and thus rid themselves of the offending material. Still more striking is the habit among ants when any of their antennæ become broken off. The comrades of the injured animal gather about it, and from their own bodies secrete in some sort of way a soft, gelatinous material which they plaster upon the injured member, and under this protective dressing the missing part is redeveloped from the remaining stump.

M. Delaunay recites many interesting facts of this nature. Some of them are his own observations, others are those of Sir John Lubbock, the distinguished entomologist, and of other scientists. From this premise he branches out on to the topic as to how far natural instincts in man may be trusted to guide us in our therapeutic applications. He is inclined to think that they ought to be trusted much more than they are.

At the outset comes the pertinent fact that civilization, with its attendant prosperity, often perverts the natural instincts. Among the well-to-do classes luxurious habits are developed which affect the system contrary to the course of nature. We may grant that natural appetites are right to start with, but false views of physical life beget unnatural desires and cravings, to follow which is physical shipwreck. A person lives years in the country eating plain food and keeping good hours. He removes to the city, and shortly falls into the latter's pernicious habits of eating highly seasoned viands and turning night into day. The first milestone on this new road reads "dyspepsia." When the question of therapeutics comes up, the appetite, now perverted, though practically the instinct for the time being, is an unsafe guide; the patient's cravings for various articles of diet cannot be indulged.

Some authorities, however, give contrary advice. The late Austin Flint caused much comment at one time

when he read a paper on diet in dyspepsia where he virtually took the ground that the patient should be allowed to eat anything he wanted. Experience does not seem to stamp approval upon this recommendation.

True instinct with reference to physical actions is always in accordance with what is physiologically right. Whenever the system of a patient seems to have wandered from this path it is the province of rational therapeutics to return it thither. It does not do to tell a patient not to worry about his food, and to eat anything he likes. Such articles of diet must be recommended as will be acted upon by perverted secretions, and then gradually the organs of digestion can be brought up to their natural tone. Then proper juices will be elaborated, and a more liberal dietary can be entered upon.

THE AIR OF DWELLING-HOUSES.

ENGLISH journals are wisely calling attention to an important paper recently published in the "Philosophical Transactions," by Professor Carnelly, Mr. Haldane, and Dr. Anderson, of Dundee. These gentlemen have analyzed the air of dwellings, and also the outside air, for carbonic-acid gas, organic matter, and micro-organisms. Statistics are given showing the comparative amount of these impurities in one-roomed houses and in houses with four rooms and upward. These figures indicate, also, as might be expected, an increase of disease in direct proportion to the crowding. The death-rate from phthisis, to be sure, is lower in those living in one- and two-roomed houses than in those living in three rooms, but this anomaly is explained when the early mortality of the former from other diseases is considered. Thus the death-rate per 10,000 from (1) diarrhœa, acute bronchitis, broncho-pneumonia, and meningitis is—for dwellers in four rooms and upward 19.6, for those in three rooms 27.6, for those in two rooms 39.7, and those in one room 59.8; from (2) phthisis the rates are respectively 13, 27.6, 24.4, and 14.6. The inquiry also showed the effect of impure air in promoting pulmonary disease; and as regards infectious disease the mortality from measles and whooping-cough seemed distinctly connected with the class of house, while, contrary to expectation, no such relation held for diphtheria.

THE DIAGNOSIS OF THE CROWN PRINCE'S MALADY.

DR. MORELL MACKENZIE, of London, has sent a cablegram to THE MEDICAL RECORD in which it is stated that the tumor in the throat of the Crown Prince of Germany is of a dense warty character (Pachydermia Verrucosa).

A most important statement, based upon the authority of Professor Virchow, is that no morbid products are discoverable by the microscope in the submucous tissues. The prognosis, therefore, based upon this examination, is to be regarded as most favorable.

A growth presenting such characteristics possesses no elements of malignancy, and depending as it may upon various constitutional as well as local causes, is, as a rule, perfectly amenable to treatment.

This information thus received from most authentic sources would seem to set at rest the question of doubtful diagnosis and relieve the minds of the many interested in the nature of the Crown Prince's malady.

ILLEGITIMACY IN EUROPE.

DR. H. HOLLAND, of Westfield, Mass., has sent to us a sheet of medical statistics which has a somewhat depressingly numerical look, but which contains many facts of interest to the student of medical and social science.

In particular the statements made regarding the great and increasing number of illegitimate births in Europe are most striking and significant. To Americans, who have a high respect for the marriage relation, and who have been taught that in the stability of the family lies the strength of the nation, the fact that in Austria over one-half the births are illegitimate seems most astounding. In Vienna, according to L. A. Bertillon, among 1,000 births 509 are illegitimate; at Prague, 505. In Styria, Carinthia, and Olmutz the ratio is from 646 to 702 illegitimates out of 1,000 births! Austrian influence seems particularly inimical to legal paternity. This high rate of illegitimacy seems to prevail quite constantly throughout Germany, ranging from 1 illegitimate to 0.9 legitimates (Vienna, 1862), to 1 to 5.

The proportion of illegitimates is very high in Paris (1 to 3), but less in all France (1 to 12), and less in Great Britain (1 to 15), Spain (1 to 18.4), the Netherlands (1 to 23), Italy (1 to 27.8), and Greece (1 to 78.6). The low rates in some countries are due to the population being more largely rural. According to Bertillon, the great co-efficient of illegitimacy (in Austria) is Roman Catholicism. During ten years Austria had nearly a million of illegitimate births.

The point of medical interest lies in the fact that the illegitimates are almost always the greatest victims of disease. It is these that fill our asylums and hospitals. In every respect they constitute an inferior order of race. Conceived, often, during a debauch or in moments of intoxication, brought up in neglect, poverty, and misery, they furnish the largest part, proportionally, of the social burden which the healthy and strong have to bear.

According to Bouchut, the mortality among foundlings in Paris is fifty-five per cent. in the first year of life, and sixty-three per cent. in the second year of life. Such a rate is greater far than exists in many other cities, but it indicates, in general, the excessive amount of disease among this unfortunate class.

Dr. Holland finally quotes Legoyt as stating that the fact is established that the number of illegitimate births is increasing in Europe.

BRASS-WORKERS' DISEASE.

VERY little attention has been paid in this country to a certain class of disorders observed among brass-workers. The best known class of symptoms is that constituting what is called "brass-workers' ague." After being exposed to the fumes of the molten metals, copper and zinc, the workman feels a sensation of discomfort and weakness, followed by muscular pains and then by a distinct chill, with headache, and often cough. After fifteen or twenty minutes a profuse perspiration breaks out; then in a few hours the improvement begins. The patient recovers in one or two days, but is liable to a relapse. Brass-founders' ague was first observed by Blaudet in 1845. It was described by Greenhow, of Birmingham,

in 1858, and again by Hirt. Brass is an alloy of copper and zinc, the latter being in the proportion of 28 to 32 per cent. In the process of making, the zinc deflagrates and fills the air with the powdered oxide. Dr. Greenhow believed, therefore, that brass-workers' ague was an acute poisoning with zinc. Hirt, however, thought it due to the mingled fumes of copper and zinc, because it is not observed among zinc-smelters. Recently Mr. Edgar Hogben (*Birmingham Medical Review*) reports a number of observations, and states his belief that brass-workers' disease is due to chronic or acute copper poisoning. Almost all patients who are copper- or brass-workers have a distinct green hue or band on the neck of the teeth between the crown and the gum. The edge of the gum is slightly blackened. The copious perspirations of brass-workers are often stained green, and white-haired workmen often have a greenish tinge to their locks.

These signs point to an absorption of copper by the workmen and favor the view that the "ague" is due, in large part at least, to this metal.

But these workmen also suffer from other symptoms of a chronic character, such as dyspepsia, metallic taste, colic, constipation and diarrhoea, nervousness, and pains of various kinds are felt. Deafness is not infrequent; cough and aphonia often occur. Paresis of the legs and symptoms like those of locomotor ataxia have been observed, and it seems probable that the copper can cause myelitis and neuritis, in the same way as does lead and other toxic agents.

News of the Week.

THE OHIO STATE MEDICAL SOCIETY met this week at Cincinnati.

DISABLED GREAT MEN.—The Emperor William is suffering from advanced senility, the Crown Prince from a laryngeal papilloma, and Bismarck from rheumatism; Mr. Gladstone has catarrhal troubles of his respiratory organs; Sir Michael Hicks-Beach has cataracts; Mr. Parnell has some unknown malady which makes him an invalid; Lord Randolph Churchill married an American lady and has the American disease, neurasthenia; Mr. Blaine is reported to be a *brightique;* Mr. Manning is hemiplegic; President Cleveland is rheumatic and lipomatosic; the Emperor of Russia is suffering from mental depression; Mr. Jacob Sharp is reported to be diabetic; while Father McGlynn and Mr. Editor O'Brien are not so well as they should be.

SUIT AGAINST THE NEW YORK HOSPITAL.—A suit was recently brought against the New York Hospital by a patient who had been operated upon for cystitis by cystotomy. The damages claimed were $30,000, on account of impotence from injury of both ejaculatory ducts and wound of rectum. The left lateral incision was made. The plaintiff claimed that in consequence of the injury all his semen escaped into the bladder. It was shown by the testimony of Dr. W. T. Bull, the operator, and Drs. George F. Shrady and L. B. Bangs, that such an injury was impossible under the circumstances, and a verdict for the hospital was rendered accordingly.

A PROPOSED NEW BUILDING FOR THE ACADEMY OF MEDICINE.—Active measures are now being instituted toward the erection of a new building for the Academy of Medicine. There is certainly an urgent need for it. The present academy building is altogether too small. It is said that a site has already been selected in a desirable locality, between Sixth and Seventh Avenues, in Fifty-seventh Street. There are nearly enough funds to erect a suitable edifice, and members of the Academy and their friends are asked to contribute. The means toward the end should not longer be deferred. We should have a building worthy of the Academy. The Building Committee is commendably in earnest in the matter.

PRACTITIONERS' SOCIETY OF NEW YORK.—Dr. George F. Shrady has been re-elected president of this Society for the ensuing year, and Dr. C. L. Dana, secretary.

THE COUNTRY PRACTITIONER'S ADVICE TO THE CITY PHYSICIAN.—Dr. E. P. Cook, of Mendota, at the last meeting of the Illinois State Medical Society, said with truth that the country practitioner could give the city physician good advice on many topics: First, not to allow the creation of any more medical colleges. Second, to limit the number of specialties. Third, not to make physicians out of persons in any way defective either as to morals, capacity, or preliminary education.

APPROPRIATIONS FOR THE MEDICAL CONGRESS.—The Illinois State Medical Society appropriated $750; the Nebraska Society, $50.

MEDICINE IN INDIANA.—At the last meeting of the State Medical Society, the President, Dr. G. W. H. Kemper, said that Indiana has now 1 physician to every 396 inhabitants—a ratio that is exceeded by only three States: Maryland, 1 to 329; Colorado, 1 to 341; and Oregon, 1 to 353. He suggested that unless Indiana is protected by some legal restrictions, she will eventually become a retreat for reckless and incompetent practitioners. One of the dangers the profession has to fear is the tendency to litigation by patients and friends for alleged malpractice in surgery.

THE NEW HAMPSHIRE STATE MEDICAL SOCIETY meets at Concord on June 21st.

THE NEW JERSEY STATE MEDICAL SOCIETY meets at Beach Haven on June 21st.

BELLEVUE HOSPITAL, NEW YORK.—Dr. George B. Fowler has been appointed Visiting Physician to Bellevue Hospital, vice Dr. E. Darwin Hudson, deceased.

BALTIMORE ACADEMY OF MEDICINE.—At the last meeting of the Baltimore Academy of Medicine the following officers were elected for 1887–1888: President, W. C. Van Bibber, M.D.; Vice-President, B. B. Browne, M.D.; Treasurer, G. Lane Taneyhill, M.D.; Secretary, C. C. Bombaugh, M.D.; Reporting Secretary, Wm. B. Canfield, M.D.; Executive Committee, T. A. Ashby, M.D., Robert T. Wilson, M.D., Hiram Woods, M.D.

HOME FOR INCURABLES, FORDHAM, N. Y. — The Twenty-first Annual Meeting of the Society of the Home for Incurables was held at the institution on Saturday, June 11th, at 3 P.M. Several addresses were made to a large gathering of friends, who were gratified at the flourishing condition of the institution.

COLONIAL AND INTERNATIONAL CONGRESS ON INEBRIETY will be held at Westminster Town Hall, London, S. W., Wednesday, July 6, 1887. A large attendance is expected.

GERMAN HOSPITAL, NEW YORK.—Drs. A. Caillé and William Balser have been appointed visiting physicians to the German Hospital.

DR. CHARLES E. SAJOUS, of Philadelphia, in correcting some remarks before the American Laryngological Congress, writes: "I am reported as saying that I 'believed that superficial organic alteration was of only temporary benefit.' Used singly this phrase implies one meaning, but coupled with the rest of my remarks the sense is entirely different. 'Aunt Elizabeth is growing' means one thing, but if you add 'old' it will mean another. The substance of what I said was that I now believed superficial organic alteration to be of only temporary benefit when the case was a complicated one; that is to say, when hypertrophies, osseous and cartilaginous growths, etc., were present. Coupled with thorough eradication of these complications, the treatment had been successful in every case treated by me last year, a number of them being partial failures of the preceding year, in which this all-important point had been overlooked."

THE ILLUSTRIOUS VIENNA ANATOMIST, HYRTL, who has for some time been suffering from cataract, has had the right eye operated on by Professor Fuchs, apparently with great success. The left eye is also affected, and will shortly have to be operated on. Professor Hyrtl is seventy-five years of age.

THE BERLIN MEDICAL SOCIETY AT THE CONGRESS.—A press cablegram, dated Berlin, May 27th, states that a committee of the Berlin Medical Society has considered the suggestion made in certain American quarters that the Society be officially represented at the Medical Congress to be held at Washington. Professor Virchow states that the committee has decided against the suggestion.

NEW VIEWS AS TO THE TIME TO GIVE COD-LIVER OIL AND BITTERS.—It has for years been taught that the best time to give cod-liver oil is from half an hour to an hour after meals. M. Sée, however, claims that it should be given at meals, just after taking soup. It may also be given at night. Bitters, he says, should be given just after meals at dessert—certainly not before meals.

THE POSITION OF THE MODERN HOMŒOPATH.—Our able and liberal contemporary, the New York *Medical Times*, makes some statements which are, particularly interesting in view of the claims made recently by a Chicago daily paper that homœopathy was a growing force which the bigoted physicians of that great commercial centre would have to recognize. Says the New York *Medical Times*: "We do not believe there is a single member of the faculties of the so-called homœopathic colleges in New York and Philadelphia who do not almost daily administer remedies which in no sense can be called homœopathic. In name they are sectarian, fighting with all their force for a name which binds them to exclusive practice, and yet in the sick-room unsectarian, broad and liberal, bringing to their aid facts and suggestions culled from a large reading of the literature and experience of all schools. Dr. T. F. Allen, at one time one of the most enthusiastic apostles of so-called high-dilution homœopathy, now admits that it is unreliable and delusive, and says that homœopathy should be taught in all medical schools, but it should constitute only a part of the course of study. We do not hold that homœopathy is the exclusive and only law of healing."

ONE OF THE LARGEST MEDICAL FEES recorded is that of $40,000 recently paid to Dr. Anderson Critchett for visiting and treating an Indian prince.

YELLOW FEVER AT KEY WEST.—On June 13th there had been twenty-six cases in all at Key West, Fla. One or two new cases appear daily, but it does not seem likely that the epidemic will be an extensive one.

AN OLIVER WENDELL HOLMES HOSPITAL is to be established at Hudson, Wis. In a letter accompanying a hymn to be sung at the dedication Dr. Holmes wrote: "I am deeply impressed with the value of a good hospital to a community. I have had the opportunity of knowing a good deal about one such institution, the Massachusetts General Hospital. I have served in this as a house pupil and a visiting physician. I have had friends of both sexes residing in its wards as patients, among them Mr. George Sumner, a brother of the distinguished Senator. I have often thought that I should be very glad, under certain circumstances, to enjoy the privileges of its restful quiet, its skilful physicians and surgeons, and its admirable nursing."

THE MILWAUKEE VETERINARIANS.—The Milwaukee *Sentinel* says that there is not a horse doctor in that city who would change places with the average family physician. They make from $3,000 to $5,000 a year, or from $15 to $20 a day, and the anxiety they undergo is not half so great as that of the man who has human patients to attend to. They charge $2 a visit, though the ailment be nothing more serious than influenza.

QUITE *à propos* is the following from the St. Louis *Republican*: Doctor's office, St. Louis. Enter a lady with a sick dog. "My dear Dr. ——, you must not be angry with me, but won't you please cut off this tumor on poor Fannie's flank?" "Well, madam, I would do anything to oblige you, but this is a little out of my line. Why don't you take the dog to a veterinary surgeon?" "But, doctor, those veterinaries are so expensive. I supposed you could do it just as well."

THE MEDICAL COLLEGE OF OHIO AND THE CINCINNATI HOSPITAL.—For a number of years, says the *Lancet and Clinic*, there has been an antagonism between the management of the Cincinnati Hospital and the Medical College of Ohio. The faculty of the latter school was almost unrepresented upon the hospital staff, and as a consequence the students attended only the clinical lectures at the Good Samaritan Hospital, where they heard their own teachers. Recently, however, the Board of Hospital Trustees has lately appointed six members of the faculty of the Ohio College to positions on the staff of the hospital.

THE APPEAL FROM THE NEW YORK EYE AND EAR INFIRMARY.—The appeal of the New York Eye and Ear Infirmary, for contributions to a building fund, is significant not only of the growth of the work of this well-known and long-established charity, but also of the development of that branch of medical science which it specifically represents. It is still true, as it ever will be, that the advancements of any science are the result of the highest talent enlisted in its behalf; but it is certainly less true than formerly that the full measure of success is a purely individual achievement. Science to-day furnishes its students with an equipment of which even the best examplers of half a century ago had but dim visions, and chief among these is a knowledge of sanitary aids. Any institution not up to the best in this respect labors under serious disadvantages, and it is because the arrangements of the New York Eye and Ear Infirmary are irremediably defective that the necessity for a new building is so urgent. The older members of the profession need hardly be reminded that Drs. Edward Delafield and J. Kearney Rodgers, half a century ago, represented in their person, the science of Ophthalmology in this part of the world. And when the Infirmary was established by them, it is only truth to say that they were the infirmary, the accessories counting for little. However, what a generation ago was begun by two is now carried forward by half a hundred surgeons, and even so sanguine a man as Dr. Delafield could hardly have imagined such a development as a possibility; and it is due to the self-sacrificing efforts of the founders of the Infirmary that it be maintained at the standard of excellence for which their reputations in their own day and generation were a synonym. This desideratum, however, can now be achieved only by the aids of scientific construction and suggestive laboratory work, and in these respects the present building has to offer only glaring defects and deficiencies. More than fifty thousand patients (old and new) were treated in the various departments of the Infirmary the past year, and above a thousand surgical operations were performed, wherein failure through any fault or shortcoming would have resulted in total blindness. In many instances the skill of the surgeon may have accomplished all that was hoped for, and yet, unless the environment of the case after it leaves the surgeon's hands is such as to prosper his work, the most successful operations will be utterly nullified. Hence the importance that eye hospitals should be in the best sense handmaids to the surgeon's skill; and it is with the view of bringing about a proper and necessary co-operative environment that the appeal of the directors of the New York Eye and Ear Infirmary for a new building has gone out to the public.

THE JOURNAL OF HYDROTHERAPEUTICS is the title of a new monthly journal published in London.

THE LARGEST DOSE OF QUININE ever given, according to Dr. C. E. F. Knight, of Dublin, was administered by himself in 1883, and was 131.25 grains in twenty-four hours.

NEW YORK POST-GRADUATE MEDICAL SCHOOL AND HOSPITAL.—At the last meeting of the Board of Directors of the New York Post-Graduate Medical School and Hospital, held on May 31st, Dr. Charles Carroll Lee was elected Professor of Diseases of Women. Associate Professor J. R. Nilsen was also elected professor in the same department, to fill the vacancy caused by the resignation of Dr. A. J. C. Skene. Several new instructors were appointed, among them Dr. Joseph O'Dwyer, the inventor of intubation of the larynx. The last year's sessions of the School have been attended by more than two hundred matriculates. The Babies' Ward continues to be well supported by benevolent ladies. The summer session began on June 15th inst.

PROFESSOR BILLROTH, at last reports, was convalescent from his severe illness.

DR. JOHN FULTON, editor of the Canada *Lancet*, died on May 15th, at the age of fifty years.

DR. MORELL MACKENZIE, who has been called in to attend the Crown Prince, is not only an accomplished laryngologist, but a gentleman distinguished for his agreeable social qualities. Dr. Mackenzie believes in specialists and specialism, and not long ago published an article in one of the reviews defending the work of the class which he well represents.

TRAINING-SCHOOLS FOR MALE NURSES.—A correspondent asks for the address of a training-school for male nurses. There is no such institution in this city, though it is proposed to establish one soon, in connection with Bellevue Hospital. At present male nurses are not trained, but pick up their knowledge in hospitals and elsewhere.

A STATE ASYLUM FOR INSANE CRIMINALS is soon to be built in this State, as the last Legislature has appropriated $300,000 for the purpose. The Controller, the the State Commissioner on Lunacy, and Dr. Carlos F. McDonald, Superinteudent of the Auburn Insane Asylum, are commissioned to select the site for the new asylum.

THE ROCKY MOUNTAINS AND A FREE M.D.—The *Medical Press and Circular* gives publicity to the extraordinary statement that there is a scheme on foot to "whisk off" the intending visitors to the Congress at Washington on an enticing excursion to the Rocky Mountains and elsewhere. The promoters of this novel project are, of course, the same persons who have in other ways endeavored "to minimize the success of the Congress." We are at a loss to know where the *Press* got hold of such a silly fancy. Quite comparable with it is its hint that honorary medical degrees will probably be conferred on some of the visitors, and it adds that doubtless the prospect of acquiring an M.D. on easy terms would act as a substantial "draw."

DEATH OF PROFESSOR BOUSSINGAULT.—The death is announced from Paris of the eminent French chemist, M. Joseph-Dieudonné Boussingault. The deceased, who was born in 1802, occupied the chair of Agriculture in the Paris Conservatoire of Art and Industry. M. Boussingault was the author of a large number of papers on physics and chemistry, and of treatises on "Chemistry and Physiology in Agriculture." His name is familiar to all medical students through his feeding experiments, in which he deprived animals of salt.

Reports of Societies.

THE ASSOCIATION OF AMERICAN PHYSICIANS.

Second Annual Meeting, held at Washington, D. C., June 2 and 3, 1887.

(Continued from page 668.)

FRIDAY, JUNE 3D—SECOND DAY—MORNING SESSION.

DR. E. T. BRUEN, of Philadelphia, read a paper on

BERGEON'S METHOD OF TREATING PHTHISIS.

Since February last he had employed Bergeon's method of treatment in sixty-one cases. Forty-four of these cases had been benefited, but of these only three appeared to regain full health. Two of these were cases of incipient phthisis, with apparent consolidation of the apex of the right lung. In one of these cases the bacillus tuberculosis was not found, although five examinations were made. In the other case the bacillus was found. In these cases the apparent recovery had been associated with a decided increase in weight. He believed, however, that the disease was simply latent. The third case was one of broncho-pneumonia. In all the other cases the lesions were more or less advanced, with the presence of cavities and profuse expectoration. In the fifteen cases in which a negative result was obtained the treatment in some was followed by temporary benefit. The good results had consisted in lessening of the expectoration, diminution of the cough, lowering of the temperature, and suspending of the night-sweats. In most of the cases there was a diminution of from fifteen to twenty beats in the pulse, and a diminution of half a degree in the temperature, during the administration of the gas. Even in those cases which were benefited, and in which the temperature had been brought to normal, there would be during the progress of the treatment occasional outbreaks, with a return of the fever and the other symptoms. These, however, disappeared under a continuance of the injections. In order to determine the effect of the treatment on the bacilli, Dr. E. O. Shakespeare made a number of examinations during the progress of the cases. There had been no diminution in the number of the bacilli. It was, however, thought that in those cases where the treatment had been continued for some time the reaction of the bacilli to the staining fluid was less marked.

Two cases had died. In one of these an autopsy was made. This case had been under treatment for two months. The walls of the cavity were moderately smooth and firm, but there was no tendency to cicatrization. The results were of a decidedly negative character.

In most of the cases a solution made by the addition of five grains each of sodium sulphide and sodium chloride to a pint and a half of water was the solution employed. In some cases the strength of the solution had been gradually increased, but where no benefit had been obtained from the weak solution the stronger solution did not act with any better results.

In cases of diarrhœa his experience had been unfavorable, except where the gas was given in very small quantities. Chronic peritonitis was a contra-indication to the use of this plan of treatment. In about one case in every ten he had observed the reaction of sulphuretted hydrogen when a paper treated with acetate of lead had been applied to the mouth.

Bergeon's method is chiefly valuable in those cases attended with bronchial catarrh. He had had very little good effect in those cases where there was thickening of the lung without much catarrh. The speaker feared that the trouble and detail necessary to the successful application of this method and the limitations of its power would cause it to be set aside for other therapeutic measures.

DR. F. C. SHATTUCK, of Boston, presented some

CLINICAL NOTES ON BERGEON'S METHOD OF TREATING PHTHISIS.

The speaker had treated only seven cases by this method. They were in an advanced stage of the disease. He had seen such improvement follow careful dietetic and hygienic management that he had not much confidence in the results claimed for special methods of treatment in these cases. Any new method of treatment will often have an apparently beneficial effect through its influeuce on the mind even in those case which are incurable. Six of the cases treated suffered with phthisis, and five were in an advanced stage of the disease. One was a case of chronic bronchitis with asthma and emphysema. Four of the patients suffered with more or less pronounced collapse from the use of the injections. Nausea, vomiting, and diarrhœa occurred in several cases. In one case, although the patient was weak, no local or general ill-effect was observed. In another case the treatment was continued four weeks with no ill-effect. The only benefit obtained was a diminution of the expectoration. In the case of asthma and chronic bronchitis, thirty-four enemata were given. The improvement was no more rapid than on a previous occasion when the patient had been treated in the same general way with the exception of the gas. He presented the following conclusions:

1. Toxic symptoms may follow the injection of sulphuretted hydrogen gas; these are nausea, vomiting, general depression, collapse, and perhaps headache.

2. Strong artificial solutions of sulphuretted hydrogen gas with carbonic-acid gas are apt to cause abdominal discomfort. The risk of this is diminished by heating the solution of the former gas.

3. This is not by any means a specific. If useful at all it is only as an auxiliary to the more usual methods of treatment.

4. The only benefit which we have seen that could be fairly attributed to the enemata was a diminution in the amount of the expectoration.

In conclusion, the author stated that the impression which he had formed was that the good results which had unquestionably followed this method of treatment were attributable in large part to the stimulation induced by the employment of a novel method of treatment which makes the patient feel that something is being done for him.

DR. WILLIAM PEPPER, of Philadelphia: I have, with the assistance of Dr. J. Crozier Griffith, employed this method in 24 cases in which the treatment was continued, on an average, twenty-five days. Other treatment was frequently combined with the use of the injections. A daily temperature record was kept in 16 cases: In 4 there was more or less reduction; in 11 there was no appreciable effect; in 1 the temperature increased, but this was probably a coincidence. In no case was the temperature brought from a febrile to a continuously normal condition. The fall was not more than is seen in similar cases under other methods of treatment.

In 20 cases in which the weight was recorded there was in 8 more or less gain. Eight pounds in thirty-seven days was the greatest gain. In 6 cases the weight remained stationary, and in 6 it was diminished.

The improvement in cough was not marked. The expectoration was somewhat diminished in 4 out of 24 cases. Search was made for the bacilli in 30 cases and they were found in 27. In 11 cases the examination was repeated, and only in 4 was there any apparent decrease. Cases of night-sweats were not numerous. In 1 they were checked and in 7 improved. Physical examination showed no improvement in a single case. The enemata had a decided hypnotic influence in 3 cases. The only unpleasant symptom of any real moment was colic. This was complained of in 11 out of 24 cases. Three others suffered so much that

the treatment could not be repeated. The colic was not often controlled by giving smaller quantities of the gas, nor did it seem to be influenced by the slowness of the injection. This method of treatment is seldom of real benefit, although it is occasionally of benefit by relieving certain symptoms.

Dr. H. C. Wood, of Philadelphia: After studying the cases treated by this method I came to the conclusion that it was of a certain amount of benefit. I saw that the method of employing the gas presented many objections. The sulphuretted hydrogen should accomplish the same results when absorbed by the stomach as when taken up by the large intestine. I have, therefore, administered the sulphuretted hydrogen gas in carbonic-acid water. Water at the ordinary temperature takes up two or three times its volume of sulphuretted hydrogen. I think that this is a distinct addition to pulmonary therapeutics. I have tried it in certain cases with benefit.

Dr. Beverley Robinson, of New York: This method is a valuable adjunct to our methods of treatment. The pain which is experienced in many cases may be due to the fact that there are ulcerations in the intestine. These may be present without the existence of diarrhœa.

Dr. George L. Peabody, of New York: I have followed all the details of this method of treatment as given by Bergeon, and have used the water of Aubon, which he recommends. My results have not been materially better than those of the gentlemen who have preceded me.

Dr. F. Forsheimer, of Cincinnati: I have performed the following experiments: I have treated two or three patients in the way recommended for some time. Then I have substituted for the sulphur solution plain water and continued the injections for a time. I have also given the carbonic-acid gas by injection; and, lastly, I have for two weeks treated these cases with the injection of air, using the Bergeon apparatus. The patients in these experiments of course did not know that any change had been made in the gas employed. As far as I have been able to judge, the patients treated with air did about as well as those treated with sulphuretted hydrogen.

Dr. James T. Whittaker, of Cincinnati: I have used the sulphuretted hydrogen gas both by injection and also by inhalation. The effects under both methods of administration seem to be the same. It mitigates the cough, relieves the fever, and lessens the night-sweats. It, however, is not a specific.

Dr. F. P. Kinnicutt, of New York, read a paper on

ATROPHY OF THE GASTRIC TUBULES—ITS RELATION TO PERNICIOUS ANÆMIA.

The speaker gave the histories of two cases in which the typical symptoms of pernicious anæmia were well-marked. At the autopsy in each of these cases nothing special was found in any organ but the stomach. The inner surface of the organ was smooth. Microscopical examination was made of numerous sections removed from different parts of the stomach. Through a large extent no trace of gastric tubules was found; in some parts the more superficial portions of the tubules could be found, but the deeper portions could nowhere be made out. There was also seen a peculiar hyaline substance in the shape of tubes and of drops. Numerous irregular cells were seen near the surface of the mucosa. The author thought that in this lesion of the stomach was to be found the explanation of a certain number of cases of pernicious anæmia.

Dr. Francis Delafield, of New York: In a number of cases marked changes in the mucous membrane of the stomach have been found. The main question is whether the lesion of the stomach is to be looked upon as a cause or as the result of the pernicious anæmia. For myself, I look upon the lesion of the stomach as secondary and not primary.

Dr. F. P. Henry, of Philadelphia: The cases reported by the author, taken in connection with other cases which have been recorded, demonstrates that there is a form of anæmia associated with, and I think dependent upon, atrophy of the gastric tubules. That this condition is primary and not secondary is, I think, sufficiently attested by the fact that it is not found in any other condition. Such an extreme degree of atrophy has not been found in any other condition with which I am acquainted. In the case reported by Dr. Osler and myself there was complete absence of the peptic glands. It was impossible that any form of gastric digestion could be accomplished.

Dr. William Osler, of Philadelphia: There is unquestionably a group of cases of pernicious anæmia, in which there are serious lesions of the gastric mucous membrane, although these lesions are not always the same. I think that it is quite impossible to distinguish clinically the cases with gastric atrophy from the cases without these lesions.

Dr. E. C. Seguin, of New York, presented

A THIRD CONTRIBUTION TO THE STUDY OF LOCALIZED CEREBRAL LESIONS.

One case reported related to the location of the facial centre. The patient, a boy of seven years, was first seen in January, 1885. He had been complaining of numbness in the right hand. The right leg and arm were slightly paretic. There was no headache and no aphasia. Shortly after this clonic convulsive movements occurred in the right cheek and both eye-balls were turned to the right. This lasted for over two hours. At times the speech was thick. There was no history of serious injury, and there was no evidence of pulmonary, renal, or arterial disease. There was no cranial tenderness on pressure. The tongue, when protruded, deviated to the right. The diagnosis was meningeal adhesion over the precentral region. Iodide of potassium was given in gradually increasing doses until from sixty to seventy-five grains were taken. Early in April of the following year symptoms of tubercular meningitis developed and the child died after an illness of three weeks. At the autopsy the ordinary lesions of tubercular meningitis were found. In addition there was a patch of adhesion situated over the left precentral gyrus and the caudal part of the second frontal gyrus. This was one inch in diameter, and would indicate that in the human brain the facial centre is in the caudal end of the second frontal convolution. The second case related to the situation of the leg-centre. A patient, aged forty-nine, suffered with paresis of the right leg and clonic spasm of the right abdominal muscles. There were right hemi-epileptic attacks, the spasm beginning in the abdominal muscles and extending to the arm and leg. These attacks were repeated without loss of consciousness. Paralysis of the right leg and paresis of the right arm developed. There was no aphasia and no choked disk. Attacks of a syncopal character occurred, in one of which the patient died. At the autopsy a large sarcomatous tumor was found involving the cortex of the paracentral-region gyrus. Two small nodules were found in the white substance below the principal tumor. This would indicate that the nerve-centre for the leg was in the paracentral lobule.

Dr. James J. Putnam, of Boston: I would report a case recently under my care. A man of forty-five suffering with locomotor ataxia, probably of syphilitic origin, suddenly developed convulsions of the right arm and leg without loss of consciousness and without change in the voice. The symptoms relating to the arm entirely passed away, but the leg never recovered its normal condition. The patient died some time later and at the autopsy a small hemorrhage was found at the lower edge of the paracentral lobule.

Dr. F. T. Miles, of Baltimore: A patient suffering with Bright's disease suddenly became hemiplegic without the voice being affected. The arm and leg were

affected. He rapidly improved, but the leg remained weak. He complained a great deal of a dragging in the shoulder. At the autopsy the only lesion that could be found was a hemorrhage of the size of a bean in the paracentral lobule.

Dr. H. M. Lyman, of Chicago: Some months ago I saw a case in which there was a sudden convulsion without loss of consciousness, the left arm being principally affected. These convulsions were repeated. There was a paretic condition of the left arm, which in a few days extended so as to involve the corresponding leg. The convulsive movements of the upper extremity continued to recur. They did not involve the face. The patient died, and a sarcoma was found on the right side occupying the position of the centres for the arm and leg.

Dr. James J. Putnam read a paper on

THE FREQUENCY WITH WHICH LEAD IS FOUND IN THE URINE, AND ON THE SYMPTOMATOLOGY OF CHRONIC LEAD-POISONING,

which consisted in an analysis of eighty-six cases in which the urine had been examined for lead, although no unequivocal signs of lead-poisoning were present.

Of the 86 cases in which the urine was examined, lead was found in 48, and was absent in 38, and there is good reason for believing that the number of cases in which it was found in the urine does not fully represent the whole number in which it was present in the body. If from the 48 cases in which lead was found we subtract those where the patients were known to have been strongly exposed by their occupation or otherwise, we have left 32, to be contrasted with 38, as approximately representing the ordinary exposure of the community. Taking the evidence furnished by the cases themselves, and seeking to indorse it by testimony drawn from the literature of the subject, by the effects of treatment, we arrive at the following conclusions, which are, of course, to be regarded as provisional:

1. It is probable that lead may cause neurasthenic symptoms, which may exist for a long time without other signs of poisoning.

2. The same is true of fine muscular tumor, especially if associated with debility.

3. The most important conclusion is, lead seems to cause occasionally a greater or less degree of the symptoms classed as spastic paraphigia, instead of the usual type of paralysis with atrophy and loss of the deep reflexes.

4. Additional evidence is furnished of the importance of suspecting lead as a cause of vague cerebral symptoms, such as are often due to syphilis.

5. In one case of epilepsy in a person not predisposed and where the probable first attack occurred at the age of twenty-five, besides the discovery of lead in the urine, there was a slight weakness and impairment of electrical reaction of the long extensors of the fingers.

Two cases of ataxia, with extensive muscular atrophy and other signs of peripheral neuritis, were reported, probably due to lead. Cases were reported in which the poisoning had been produced by working in the manufacture of rubber.

Dr. I. E. Atkinson, of Baltimore, read a paper entitled

FORMS OF TYPHOID FEVER SIMULATING REMITTENT MALARIAL FEVER.

The object of the present paper was to describe forms of typhoid fever in which all the usually characteristic symptoms are absent except mild fever. These cases commonly occur during the late summer and early autumn. They begin with a chill or insidiously and assume a course of a mild remittent type, never passing into a typhoid condition, never developing the characteristic symptoms of typhoid, yet absolutely uninfluenced by antiperiodic treatment. They last three, four, or even five weeks, and almost always end in slow lysis and recovery. They resemble malarial conditions, except in the persistence of fever under strongly antimalarial treatment, and in the occasional concurrence of circumstances pointing to a typhoid origin. There is no hebetude, the patient sleeps well, the tongue is slightly coated, there is almost never epistaxis, constipation is commonly observed, there are no bloody stools, no tympanites, no iliac tenderness or gurgling, and rose-spots are usually absent. The patient is bright and cheerful. The more severe cases after beginning as remittents may gradually evolve typhoid symptoms. Three cases were reported showing the type of fever described occurring under conditions indicating their typhoid origin. While typhoid fever is one of the most characteristic of diseases, its special symptoms are very inconstant. There is not a sufficient realization of the mildness with which it often runs its course. Walking typhoid, although usually considered rare, is in reality frequent. Cases in which sudden accidents reveal their true nature are probably but a small portion of the whole number. Our views of typhoid fever have been largely modified. Low ranges of temperature are now often encountered. Straube and Fraentzel and others have reported severe forms of the disease with high mortality, although the temperature did not attain 102.2°. Normal and even subnormal temperatures are sometimes maintained throughout the attack. In mild cases a slight degree of fever-heat is not at all uncommon. Liebermeister and others report such cases. Loomis treats "mild typhoid" with walking cases, and states that the eruption appears early and is scanty and brief, and that a diarrhœa is present in most cases. This is true of many cases, but there is a large class in which constipation is the rule and rose-spots the exception—much larger than is generally admitted. Liebermeister and others describe interesting examples. Dr. W. W. Johnston has most accurately described similar cases occurring in Washington. Malaria often complicates typhoid fever, but it oftener happens that its presence is assumed unjustifiably. A mental bias in favor of malaria is often strongly pronounced in the face of the strongest contrary evidence. The diagnosis of these cases from remittent malarial fever often rests upon the crucial test of treatment. It is admitted that occasionally antiperiodic remedies fail to control the malarial paroxysm, especially in pernicious and adynamic forms. In milder forms the behavior under quinine practically solves the difficulty. Where the full administration of the antiperiodic remedy for a number of days fails to terminate the attack, the diagnosis of typhoid fever becomes justifiable, and the prognosis can be made with a high degree of confidence. Not often earlier than the second or later than the fourth week the fever will terminate almost constantly by lysis, rarely by crisis.

Dr. William H. Draper, of New York: I see many cases in New York which have been diagnosed as typho-malarial fever which I consider to be cases of typhoid fever. I think that the diagnosis of typhoid fever can be usually made in the course of the first week of the disease by attention to the characteristic course of the fever. The nervous symptoms of typhoid fever are of great importance in the diagnosis. In considering a disease like this we should study it in its totality and not in its elementary parts. Dr. Atkinson has spoken of the aid given by quinine in the diagnosis. My own experience confirms that of others with reference to the use of quinine as an antipyretic in typhoid fever. Unless used in such doses as to produce a certain degree of collapse it is useless; I believe that it does nothing more than to increase the discomfort of the patient. If in five or six days the use of quinine does not succeed in checking the fever we may conclude that we are dealing with a continued fever of the nature of typhoid.

Dr. John Guiteras, of Charleston: From my observation I have come to a conclusion different from that

expressed by the author. These cases present no symptom of typhoid fever with the exception of the continued fever. They are so numerous as we go farther south that I would class them as a separate disease. I have examined some of these cases of prolonged continued fever of southern countries post-mortem and have failed to find the lesions of typhoid fever. My view of this fever is that it belongs to the class of functional fevers. A simple continued fever may be set up by an excessive demand made upon any of the important functions of the body. I have thought that in warm climates where constant exertion was required on the part of the heat-centres to keep within limits the production of heat a paralytic condition of these centres might be induced, especially toward the close of a long and hot summer.

Dr. A. Jacobi, of New York: There is one aid in diagnosis which I have not heard alluded to, and that is the urine-test of Ehrlich. This has frequently been of much service to me. It is prepared as follows:

Solution No. 1: Sodium nitrite, 1 part; water, 200 parts.

Solution No. 2: Sulfanilin acid, 5 parts; concentrated muriatic acid, 50 parts; water, 1,000 parts.

Add one and one-fifth parts of the first solution to fifty parts of the second.

Equal parts of this mixture and the urine are to be mixed. Then add about sixty or seventy per cent. of aqua ammonia. In normal urine there will be only a slight discoloration, while in urine from typhoid fever it will be deep purple. This test is rarely applicable during the first two or three days. It generally can be applied up to the fifteenth or eighteenth day. It should also be stated that in cases of acute miliary tuberculosis the same reaction is obtained.

Dr. R. H. Fitz, of Boston: An epidemic of an anomalous form of fever recently occurred in Boston among a number of emigrants. The diagnosis lay between typhoid and typhus fever. It was concluded that they were cases of typhoid fever. One case ended fatally. The intestinal lesions were of the most trivial character. The enlargement of Peyer's patches was no greater than is seen in many cases of enteritis. The lesions were so superficial that it seemed quite probable that they would have disappeared if the case had lived a few days longer.

Dr. Israel T. Dana, of Portland: Some of the cases to which Dr. Fitz has referred found their way to Portland and one of them died there. The autopsy in this case showed well-defined but not complete lesions of typhoid fever. I believe that this is what will generally be found—that the atypical cases will present lesions as imperfectly developed as the symptoms.

Dr. W. J. Councilman, of Baltimore: I think that a simple examination of the blood will enable us to differentiate between the continued malarial fevers and typhoid fever. The organisms found in these cases of continued malarial fevers are very easy to recognize.

Dr. William Osler, of Philadelphia: I agree with the last speaker, that we have in the microscopical examination of the blood a positive means of diagnosis. I have no doubt that in these doubtful cases a careful examination of the blood will determine whether they are malarial or not, while a careful examination by culture methods will determine whether or not it is a case of typhoid fever.

EXECUTIVE SESSION.

The report of the Committee on the Congress of American Physicians and Surgeons was received and adopted, and Dr. William Pepper, of Philadelphia (with Dr. Reginald H. Fitz, of Boston, as alternate), was appointed as the representative of this Association.

OFFICERS FOR THE ENSUING YEAR.

President—Drs. William H. Draper, of New York.

Vice-Presidents—Drs. Francis Minot, of Boston, and J. Palmer Howard, of Montreal.

Recorder—Dr. William Osler, of Philadelphia.

Secretary—Dr. Henry Hun, of Albany.

Treasurer—Dr. W. W. Johnston, of Washington.

The following were elected to active membership: Drs. A. V. Meigs, Louis Starr, and J. H. Musser, of Philadelphia; Dr. James E. Reeves, of Wheeling, W. Va.; Dr. William H. Whitney, of Boston; Dr. James Stewart, of Montreal, and Dr. M. Allen Starr, of New York.

Dr. John S. Billings, of Washington, was elected to honorary membership.

Adjourned.

AMERICAN CLIMATOLOGICAL ASSOCIATION.

Fourth Annual Meeting, held in the Johns Hopkins University, Baltimore, Md., May 31 and June 1, 1887.

Tuesday, May 31st—First Day—Afternoon Session.

The Society was called to order by the President, Dr. Frank Donaldson, Sr., of Baltimore.

PRESIDENT'S ADDRESS—PROPHYLACTIC TREATMENT OF THOSE WHO INHERIT A PREDISPOSITION TO PHTHISIS.

He referred to the great mortality of phthisis, but certain statistics compiled in this country and abroad show a decrease in the annual mortality. In England there has been a gain in males of fourteen per cent., and in females of twenty-two per cent.; in Massachusetts there has been a gain of fifty-four lives per hundred thousand. Thirty per cent. of the cases have an inherited predisposition to the disease. The hereditary form, when developed, offers the least prospect of recovery. Reference was made to the pathology of the disease. Five years have elapsed since the contagion of tuberculosis was alleged to have been discovered, and nearly all observers have now confirmed the views of Koch. There is abundant evidence that human subjects readily yield to the bacillar poison when previously they have been in perfect health. The bacillus is always present in phthisis, and we must accept it as the full explanation of the manifestations of tuberculosis. The disease may be propagated by the inhalation of the dried bacillus from the expectoration of diseased persons by persons predisposed to tuberculosis. The various theories which had been advanced to explain heredity were discussed. The prophylactic treatment embraces two elements: (1) The improvement of the general health of the subject, and (2) the protection from contagion. The tuberculous mother should not nurse her child, but, if possible, it should be given to a healthy wet-nurse. The hygiene of the nursery should be looked after carefully. The room should be well ventilated, and kept at a comparatively low temperature. The subject should live much out of doors, especially between the ages of fifteen and twenty years. The beneficial influence of sunlight should be borne in mind. All causes of glandular irritation should be avoided. Scrofulous glands should be dispersed or removed. The physical form of the chest should be enlarged by gymnastic movements. If possible, life should be passed in high altitudes. Oleaginous fluids are useful if they can be digested. The milk and flesh of tuberculous animals must be avoided, for cooking rarely destroys the bacilli of beef. If the prophylactic treatment is thoroughly carried out, the hereditary proclivity may remain latent, and the individual never contract the disease.

Dr. James R. Leaming, of New York, read a paper entitled

THE PHILOSOPHY OF CLIMATIC TREATMENT OF DISEASES OF THE CHEST.

It is observed that the greatest improvement takes place during the first three weeks of the patient's stay at a new place. The suggestion was made that a line of resorts be established along the Atlantic sea-coast. The

patient could begin in the summer at the most northern and gradually pass southward, making a stay of a few weeks at each place. Having completed the series, the patient may return, taking the stopping-places in a reverse order. This same plan might be applied to the Pacific coast and to the mountains. The speaker also suggested the propriety of state and municipal authorities furnishing sanatoriums for the benefit of those unable to avail themselves of the advantages of existing institutions.

Dr. R. G. Curtin, of Philadelphia, read a paper on

THE INFLUENCE OF SEA-AIR ON SYPHILITIC PHTHISIS.

The speaker gave in detail the histories of five cases of what appeared to be syphilitic phthisis in which improvement followed prolonged sea-voyages, and in each case the symptoms returned when the patient again took up his residence on land. He was led to consider the cases observed as cases of syphilitic phthisis, for the reasons that there were no symptoms of chronic pneumonia preceding the attack, that the lung-trouble followed syphilitic infection with constitutional symptoms, that the disease was influenced to some extent by constitutional treatment, and that there was no tendency to tuberculosis in these cases. He referred to the observations of Dr. William Porter, who relies upon the following points in reaching a diagnosis of syphilitic phthisis: 1, Abundant expectoration without signs of softening; 2, a debilitated condition, without marked emaciation, and a rational history of phthisis; 3, pronounced dyspnœa, without evidence of cardiac or pulmonic obstruction to the circulation; 4, pain along the sternum and the tibial crests; and, 5, the satisfactory response to treatment. Dr. Porter had examined the sputa in one hundred cases without finding the bacillus. The speaker was not prepared to say why it was that the sea-air proved beneficial in these cases, while in most of the ordinary cases of phthisis residence on the sea-coast was not desirable.

A paper on "Diseased Conditions for which Sea-air is of Doubtful Benefit," by Dr. Boardman Read, of Atlantic City, was read by title.

DISCUSSION.

Dr. E. T. Bruen, of Philadelphia: It is probable that in syphilitic phthisis the benefit of the sea-air is due to its influence on the catarrhal processes. In catarrhal affections of the mucous membranes in general, it has seemed to me that residence at the sea-shore was useful. On the other hand, in tubercular phthisis it has seemed to me that the influence of sea-air was disastrous. I have found that those cases benefited by prolonged sea-voyages are those in which there is no inherited tendency to tuberculosis.

Dr. V. Y. Bowditch, of Boston: I should make a great distinction in speaking of the sea-coast air and the pure sea-air. Cases which could not stand the harsh, cold, and changeable air of the sea-coast may be benefited by a sea-voyage or residence on an island some distance from the shore where the conditions are similar to those which are obtained in a sea-voyage.

Dr. F. I. Knight, of Boston: While I am sure that the general feeling is that the coast climate is not suitable for cases of phthisis, yet in several instances I have known patients to improve and gain in weight during a stay at some of the coldest resorts on the New England coast.

Dr. James C. Wilson, of Philadelphia: With reference to residence at the sea-coast in the treatment of phthisis, I would say that, in my experience, there are three classes of patients with consumption who cannot go to our exposed Atlantic sea-coast without risk. These are, first, those in whom there is active febrile disturbance; secondly, those of a highly excitable and nervous organization; and, thirdly, those who suffer from repeated attacks of spitting of blood. Such patients cannot safely reside for any length of time on the Atlantic sea-coast.

Dr. Frederick C. Shattuck, of Boston: The author has referred to syphilitic phthisis; that is to say, a destructive process in the lung, not due to tubercle, but to the syphilitic virus. It seems to me to be a difficult matter to determine whether or not there is such an affection. Tubercular phthisis varies so much in its symptoms that the points mentioned, I think, cannot be relied on. It seems to me that the criterion would be the presence or absence of the tubercle-bacillus. The fact that the bacillus is not found is no proof that it is not present. The German Committee on the Collective Investigation of Disease studied this matter last year, and came to the conclusion that so-called syphilitic phthisis had no real existence. Both syphilis and tuberculosis are common diseases, and the one offers no immunity from the other, so that we should expect to frequently find them combined in the same individual.

Dr. J. H. Musser, of Philadelphia: In my experience in the post-mortem room I have come across only one case in which the lesions bore any resemblance to what we should expect to find in syphilitic phthisis. This was the case of a young man with syphilis, and cirrhosis of the liver due to syphilitic interstitial hepatitis. There were also syphilitic gummata in the brain, and the patient died of syphilitic meningitis. There were scattered through both lungs innumerable miliary granules, not at all resembling miliary tubercles. These were solid bodies made up of a yellow core which was moderately firm and surrounded by a ring which made up at least one-half of the nodule. The microscopical examination showed these bodies to consist of a ring of firm fibrous connective tissue, in the centre of which there were degenerating cells. We were unable to find the bacillus of phthisis, but, as has already been stated, the failure to find it is no proof of its absence. I should not call this a case of syphilitic phthisis, but rather a case of syphilis of the lungs.

Dr. E. Fletcher Ingalls, of Chicago: I apprehend that most of us have seen cases in which the syphilitic nature of the disease admitted of no question. Even if the bacilli are found, it would be no proof that the case had not originated as a syphilitic trouble and that it had subsequently become tubercular. I recall one case in which the syphilitic manifestations were very prominent. There was consolidation of the lung, particularly of the middle portion of one lung. There was a history of syphilis, and distinct cutaneous lesion. The patient had been in Colorado and returned much worse. On his return to a lower altitude he was put on the use of iodide of potassium, and ultimately apparently recovered.

The papers were also discussed by Drs. Ford, of Utica, and Frank Donaldson, Jr., of Baltimore.

Dr. J. H. Musser, of Philadelphia, read a paper entitled

THE TREATMENT OF THE FINAL STAGE OF PHTHISIS.

The paper consisted of a detailed account of the symptoms met with in the last stages of phthisis, and referred to the various measures which he had found useful in these cases. To relieve the high temperature, he had resorted to antifebrin with advantage. Quinine was found to act unsatisfactorily.

The President announced as the Nominating Committee, Drs. F. C. Shattuck, E. T. Bruen, Willis E. Ford, B. F. Westbrook, and W. H. Geddings.

Adjourned.

EVENING SESSION.

Dr. Frank Donaldson, of Baltimore, read a paper entitled

CAUSES OF CARDIAC FAILURE IN HIGH ALTITUDES.

The important fact that there is often great dyspnœa and sudden cardiac failure on going to high altitudes has not been sufficiently emphasized. Many patients are sent, for general or special reasons, to high altitudes, and are thereby done great injury, especially if they suffer

from any form of functional or organic heart disease. From some experiments with the pneumatic cabinet, the author had come to the conclusion that this treatment should not be employed in cases in which there is any valvular disease of the heart or fatty degeneration of its walls. Before being subjected to treatment in the cabinet, an examination of the heart should always be made. It has been asserted that the cause of the cardiac failure in ascending to high altitudes is want of oxygen. The speaker had performed certain experiments with reference to this point. At altitudes within ten thousand feet there is sufficient oxygen to supply the hæmoglobin. In ascending to high altitudes the pressure of the air within and without the lungs is the same, but on the heart the action is different. The pressure is removed from the outer surface of the heart, while the internal blood-pressure remains the same. There consequently must be dilatation of the heart-walls. This, in the author's opinion, was the cause of the heart-failure under these circumstances.

DISCUSSION.

Dr. B. F. Westbrook, of Brooklyn: I have no doubt that the explanation of the author with reference to the effect of high altitudes on the heart is correct, but in the pneumatic cabinet the conditions are different. As a matter of practical experience, I have found that patients with mitral stenosis, or mitral regurgitation with pulmoary congestion, can be put into the cabinet with safety. I should hesitate very much before putting a patient with aortic regurgitation into the pneumatic cabinet. In mitral disease, however, the tendency is to assist rather than exhaust the diseased heart.

Dr. H. F. Williams, of Brooklyn: Certain New York observers have claimed that in weak heart, particularly the tobacco heart, they have obtained with the pneumatic cabinet an effect similar to that of digitalis, due probably to a stimulation of the circulation through the coronary arteries.

Dr. S. S. Cohen, of Philadelphia: The inhalation of compressed air in cases of dilated heart has been recommended by Waldenburg and others. I have recently employed this measure with beneficial results in alleviating the dyspnœa and defective circulation due to a dilated heart.

Dr. James T. Whittaker, of Cincinnati: The condition met with in a rarefied atmosphere cannot be compared with that met with in the pneumatic cabinet. It does not seem possible to exert any mechanical pressure upon the heart in the cabinet. This is one of the most efficacious means of treating irregular heart. I have used the cabinet for two years and have seen no ill effects from its use, although I should not subject a patient with advanced cardiac disease to this plan of treatment.

SOME HOSPITAL CASES OF PHTHISIS; MARKED IMPROVEMENT UNDER GENERAL TREATMENT, WITH SPECIAL REFERENCE TO ALIMENTATION,

was the title of a paper by Dr. F. C. Shattuck, of Boston.

The cases reported had been treated in the Good Samaritan Hospital of Boston, which is devoted to the care of chronic disease. Many of the patients had been exposed to unfavorable hygienic surroundings. The treatment employed was devoted largely to improvement of the general condition. Search had been made for a specific treatment. If the disease is of a parasitic nature it is natural to suppose that such a treatment would be of avail. At present no such method of treatment is known. There are few individuals to whose lungs at one time or another the bacillus does not gain access. The fact that certain individuals are affected while others escape forces us to believe that there is a predisposition to the disease. The treatment employed by the author had consisted in relieving symptoms, improving the digestion, and the administration of as much food as the patient could take in the natural way. Artificial feeding had not been resorted to, but the patient was fed six or seven times a day. From two to ten raw eggs, with milk, were given daily to each patient. Alcoholic stimulants were not administered to these patients as a routine treatment, but were used only temporarily for special purposes. He had for several years been systematically cutting down the quantity of alcohol used in chronic cases, and had seen no reason to regret it. His experience had been that alcohol was not used with sufficient discrimination in chronic cases of disease. Beef, milk, eggs, and other nourishing articles are more expensive than alcohol, but if they can be consumed in sufficient quantity they are more useful. In 1883 the amount expended per patient for alcoholic liquors had been $2.70, while in 1886 it had been only thirty-four cents. The patients received no injury, even if they were not benefited by this reduction. Eight cases of well-marked phthisis were reported in which a decided gain in weight and general improvement resulted from the employment of the plan of treatment above described. About sixty cases had been under treatment.

Dr. E. T. Bruen, of Philadelphia, read a paper on

GASEOUS ENEMATA.

Of the therapeutic measures under the control of the profession, diet, climate, and suitable hygiene are of principal importance. It is possible by climatic and dietetic treatment to so change the nature of the tissues that they shall not be suitable culture-media for the growth of the bacillus of tuberculosis. I wish, however, to refer more particularly to the use of the Bergeon method by the injection of sulphuretted hydrogen. To antagonize the specific cause of the disease this method has been a failure so far as my experience goes. Since February last I have had under treatment sixty-one cases by this method. Systematic examinations of the sputa have been made by Dr. E. O. Shakespeare. There has been no apparent reduction in the number, or change in the character, of the bacillus. This method should be classed among the methods at our disposal for the treatment of this disease. The good effects in my hands have been reduction of temperature, reduction of expectoration, very often a complete suppression of bronchial catarrh, and relief of cough. This leads to improved digestion, and enables the dietetic treatment to be carried out with great thoroughness. Forty-four of these cases showed improvement to a certain extent, the average gain in flesh being about five pounds. In one-half of the cases the temperature has been brought to the normal, while in the remainder, although the temperature has not been brought to normal, it has been reduced two or three degrees. In fifteen cases the results have been negative, but in no case did any harm follow the use of this plan of treatment. The improvement has been most marked where there is considerable catarrhal element. Those cases in which there has been more or less thickening of the lung, with the general symptoms well marked, wasting, loss of flesh and weight, without much rise of temperature, I have found were not specially benefited by the injection of gas. I have had the opportunity of making a post-mortem in one case which had been subjected to this treatment. Although the cavities in the lungs were unusually clean, I did not observe any evidences of cicatrization. With reference to the strength of the solution, I have not found strong solutions at all satisfactory. The best results have been obtained from a solution of five grains of sulphide of sodium with five grains of chloride of sodium in one and a half pint of water. I have never found it desirable to administer more than a gallon and a half of gas at one time. I insisted that the injection be made slowly, and that one-half to three-quarters of an hour should be occupied. I have not derived as much satisfaction in the treatment of the various forms of phthisis to which I have referred from any method as I have from the injection of

sulphuretted hydrogen. I have always tested the breath for the presence of sulphuretted hydrogen. I have had negative results in at least eight out of every ten cases.

Dr. S. S. Cohen, of Philadelphia: Dr. J. Solis-Cohen and myself have obtained the most decided benefit from strongly impregnated waters. The best results were obtained in those cases in which the patient had a decided taste of sulphuretted hydrogen, which continued for two or three hours after injection. The best effect has been obtained in those cases in which suppuration is about beginning. In about fifty per cent. of the cases the condition has been greatly ameliorated. In another twenty-five per cent. there was slighter amelioration, while in the remaining twenty-five per cent. there was more or less benefit to certain symptoms. I have seen no case in which no results were obtained.

Dr. James T. Whittaker, of Cincinnati: I have for a month used sulphuretted hydrogen by inhalation, having previously employed it for a month by injection. It has produced no unpleasant results in any case. The effects obtained have been about the same as those resulting from injection. I have found records of only two in which fatal results followed. It has been asserted that the good effect is due to the carbonic acid, but I am entirely incredulous of the effect of this agent.

Dr. Roland G. Curtin, of Philadelphia: It has been recommended by Dr. H. C. Wood that the sulphuretted hydrogen be taken by the stomach, using a saturated solution through which carbonic acid has been passed. I have tried this in four or five cases, and have had the same effects as from injection.

Dr. J. H. Musser, of Philadelphia: I have used the gaseous injections to a certain extent; but my results have not been as marked as some which have been reported. My best results have been in two cases. One was a case of incipient phthisis, in which the patient gained thirteen and one-half pounds in four weeks. The second case has gained eight pounds in four weeks, and has much improved in general condition.

Dr. F. C. Shattuck, of Boston: I have used the sulphuretted hydrogen gas, and in several patients it produced collapse in varying degrees, with weak pulse, nausea, vomiting, and headache. In several other cases, although the treatment was well tolerated, it produced no good effect.

Dr. B. F. Westbrook, of Brooklyn, read a paper entitled

THE LOCAL TREATMENT OF DISEASES OF THE RESPIRATORY ORGANS.

In the treatment of phthisis the best results are obtained in the early stages of the disease, or where the disease, although further advanced, is limited to a small portion of the lung. The use of sprays is beneficial only in so far as we desire to treat the coexistent bronchitis, or cavities connected with bronchi of the second or third order. In incipient phthisis, with very little bronchial catarrh, local treatment is probably of little service. These cases are best treated with compressed air. In a large proportion of the cases we may hope to render the disease latent. The expansion of the lung favors the expectoration of the contents of the smaller tubes, and modifies the intra-thoracic circulation. The sittings should be frequent, every day or every second day. Ten minutes is usually sufficiently long for the patient to remain in the cabinet. The pressure should gradually be increased up to one-half or three-fourths of an inch. If used cautiously, this is the best method for the local treatment of incipient phthisis. With the Evans inhaler his results had also been satisfactory.

In the treatment of advanced cases of phthisis, the first effort must be to cure or diminish the bronchitis. The pneumatic treatment then comes into play. This gives better expansion, improves the circulation, and alters the action of the trophic nerves. In all cases internal medication has been combined with the local treatment. The more acute the disease, the higher the fever, and the more sudden the onset, the less can we expect to accomplish by treatment. In no case diagnosed as acute phthisis did treatment have the slightest effect.

The Association then adjourned.

THE CONNECTICUT STATE MEDICAL SOCIETY.

Ninety-sixth Annual Meeting, held in Hartford, May 25 and 26, 1887.

(Special Report for The Medical Record.)

Wednesday, May 25th—First Day—Morning Session.

The meeting was called to order in the County Court Room by The President, who then delivered the

ANNUAL ADDRESS.

The speaker reviewed briefly the work of the past year, and stated what was to come before the Society for action. He said there was no unfinished business to be brought up. A request had been sent to him and to the Secretary from the Fairfield County Medical Society, for a large representation from each county to the meeting of the fellows, but he thought that as the forty-nine incorporators were six years in formulating and procuring the charter, and as the snbject had been agitated many years ago, at which time the presidents of the county societies were made fellows *ex officio*, the State Society had a sufficiently large representation from each county.

A request had been received by the President and Secretary to have the Society contribute toward defraying the expenses of the Ninth International Medical Congress. He advised the members to contribute and endeavor to obtain a large membership.

The Wisconsin Medical Society had sent resolutions protesting against the immigration of the lame, halt, and blind paupers of other countries, and he suggested that a committee be appointed to take such action as was proper and report on these resolutions.

This suggestion was immediately followed, and it was voted to appoint such a committee.

The announcement of the various committees was then made.

The report of the Committee on

A LAW TO REGULATE THE PRACTICE OF MEDICINE

was then read. This committee had been appointed to consult with committees from the homœopathics and eclectics in regard to the enactment of a law prohibiting all from practising medicine and surgery except those who have diplomas from a recognized medical college and have had those diplomas registered with the clerk of the Superior Court. The committee reported that the bill had been introduced so late that it was crowded out by other business, and that the Judiciary Committee of the Legislature thought more time should be given to those who might object to such a law.

THE REPORT OF THE TREASURER

was then submitted. He reported a balance in the treasury of $759.12.

It was voted that all in arrears for two years be dropped from the roll of membership by the clerks of the several county societies.

A committee was appointed to solicit funds for the Ninth International Congress.

The Committee on Honorary Members presented the name of Dr. John C. Dalton, which, in accordance with the by-laws, was laid over for action at the next meeting. It was voted that a committee of two from each county

be elected by the county societies to revise the charter, and act, if advisable.

THE ELECTION OF OFFICERS

for the ensuing year was then held, with the following result:

President—Dr. Francis Bacon, of New Haven.
Vice-President—Dr. George L. Porter, of Bridgeport.
Treasurer—Dr. E. P. Swasey, of New Britain.
Secretary—Dr. S. B. St. John, of Hartford.
Committee on Matters of Professional Interest—Drs. F. E. Beckwith, of New Haven, and James Olmstead, of Middletown.
Dissertator—Dr. William H. Carmalt, of New Haven.
Delegates to American Medical Association—Drs. Lewis Barnes, Alfred North, W. L. Barber, C. J. Fox, T. M. Hills, A. L. Nelson, J. M. Kenniston, William Deming, M. C. O'Connor, and P. H. Ingalls.

Delegates were also appointed to attend the meetings of the State Societies of Maine, New Hampshire, Vermont, Massachusetts, Rhode Island, New York, and New Jersey.

EVENING SESSION.

DR. W. E. CUSHING, of Boston, read a paper on

ULCERATION OF THE OS UTERI.

This was illustrated by micro-photographs shown by the stereopticon. The difference between simple ulceration and cancerous disease was very beautifully shown. The author spoke briefly on the treatment, giving a *résumé* of the most approved treatment, and also his own ideas in regard to astringents and the proper time to operate. He particularly emphasized the suggestion that in cancerous disease operation should be undertaken early.

Later in the evening the Society was tendered a reception by Dr. W. G. Russell at his residence on Farmington Avenue.

THURSDAY, MAY 26TH—SECOND DAY.

In the absence of both the President and Vice-President, the chair was occupied by Dr. R. L. Strickland. The Secretary reported that twenty-seven new members had been gained during the year. There had been eight deaths and seven removals. There was now a total membership of five hundred and eight.

Dr. T. M. Hills, of Willimantic, being detained at home by sickness, was unable to read his paper on

THE TOWN: ITS POOR AND THE PHYSICIAN'S LEGAL AND HUMANE RELATION TO THEM.

The paper was accordingly read by title.

Dr. W. H. Taylor, a delegate from the New Jersey Medical Society, was introduced, and this was followed by a report of the delegates of the State Society to other societies.

DR. A. E. ABRAMS then read a paper on

TREATMENT OF DISEASES OF THE EAR BY THE GENERAL PRACTITIONER.

He said that most general practitioners were unwilling or unable to treat diseases of the ear, and suggested that it was the duty of all to know how to treat these cases, as well as it was for them to understand the manner of handling pneumonia or dysentery. Difficult cases are sent to the specialist, and mild cases neglected. Thousands of cases of catarrhal deafness are allowed to go on without attention. Colds and throat-troubles leave the ear diseased, and we should always examine the ear before dismissing the patient.

DR. ST. JOHN said that while physicians thought little of ear-troubles and discharges, life insurance companies are particularly careful in such risks, and in some cases refuse to insure.

DR. A. W. NELSON reported that the Committee on County Resolves was in favor of a

REDUCTION IN THE SCALE OF CHARGES,

so that physicians might compete with unqualified practitioners and midwives, and by that means drive them from business, or else that schools should be established where at least the first principles of obstetrics could be taught. This, he thought, was a duty which the profession owed to the poor.

DR. GEORGE R. SHEPHERD reported several original cases of

CLIMACTERIC GLYCOSURIA.

He said that obstinate pruritus vulvæ was an unfailing symptom, and in all cases in which it occurred at about this period the urine should be examined. He called those cases climacteric where sugar appeared about the time of the change of life, and disappeared later without any special treatment. In his cases severe injuries caused no serious complications, as is usual in diabetes.

DR. J. B. KENT then read a paper on the

RELATION BETWEEN SCROFULA AND TUBERCLE.

His definition of scrofula was that it was a tubercle-forming process, and tubercle was only a more advanced stage of the same disease.

DR. T. H. RUSSELL read a paper on the

NEW REMEDIES — ANTIPYRINE, ANTIFEBRINE, PARALDEHYDE, AND COCAINE.

This paper was simply a *résumé* from the medical journals. Several papers were read by title. The meeting then adjourned at 2 P.M.

The annual banquet was held at the United States Hotel.

MASSACHUSETTS MEDICAL SOCIETY.

One Hundred and Sixth Annual Meeting, held in Boston, June 7 and 8, 1887.

TUESDAY, JUNE SEVENTH—FIRST DAY.

ON the morning of the first day the fellows visited the Massachusetts General, the City, and the Children's Hospitals, where they witnessed a number of interesting operations.

The first session was held in Huntington Hall, at 2 o'clock P.M.

DR. HERBERT L. BURRELL, of Boston, read a paper on

THE IMMEDIATE TREATMENT OF FRACTURE OF THE SPINE,

by rectification of the deformity and fixation by plaster of Paris. He showed two cases successfully treated by this method, and maintained that the measure was a rational one which should be employed in many cases. He insisted upon the immediate correction of the deformity, since softening of the cord from pressure may occur within forty-eight hours.

DR. STEPHEN W. DRIVER, of Cambridge, read a paper entitled

OBSERVATIONS ON THE PUERPERAL PELVIC LIGAMENTS.

The author had been able to detect flexion of the innominate bones upon the sacro-iliac joint, when the thigh was flexed on the tested side, in about seventy per cent. of some three hundred cases. The examination was made by placing the finger on the subpubic arch during flexion of the thigh, when the patient was walking or lying down.

DR. M. H. RICHARDSON, of Boston, presented a paper on

THE SURGICAL TREATMENT OF CHRONIC EMPYEMA,

which was read by title.

The following papers were also read: "Tumors of the Bladder," by Dr. G. W. Davis, of Holyoke; "Cases of

Burns, with Special Reference to Complications, Sequelæ, and Treatment," by Dr. J. E. Cleaves, of Medford; "The Relations of Tea Drinking to Disorders of the Nervous System," by Dr. W. N. Bullard, of Boston; "Pulmonary Tuberculosis as a Sequel to Ordinary Pleurisy with Effusion," by Dr. H. F. Vickery, of Boston; "Laparotomy for Pus in the Abdominal Cavity and for Peritonitis."

WEDNESDAY, JUNE 8TH—SECOND DAY.

DR. F. N. GOSS, Secretary, stated that 95 new members had been received since the last annual meeting, and 26 had died. There were now 1,661 names on the roll of membership.

DR. F. W. DRAPER, Treasurer, reported a balance of $2,315.21 in the treasury.

THE ELECTION OF OFFICERS

was then held, with the following result:

President—Dr. T. H. Gage, of Worcester.
Vice-President—Dr. W. G. Breck, of Springfield.
Corresponding Secretary—Dr. C. W. Swan, of Boston.
Recording Secretary—Dr. F. W. Goss, of Roxbury.
Treasurer—Dr. F. W. Draper, of Boston.
Librarian—Dr. E. W. Brigham, of Boston.
Orator—Dr. B. J. Jeffries, of Boston.
Annual Chairman—Dr. C. B. Porter, of Boston.

The following interesting papers were then read: "A Contribution to the Study of the Etiology of Summer Diarrhœa of Infants," by Dr. H. C. Haven, of Boston; "Sepsis and Antisepsis in Summer Diarrhœa," by Dr. S. A. Potter, of Roxbury; "Training Nurses," by Dr. A. Worcester, of Waltham; "The Value of Public Health Measures to the State," by Dr. S. W. Abbott, of Wakefield.

DR. GEORGE TOWNSEND, of Natick, then delivered

THE ANNUAL ORATION,

entitled "The Massachusetts Medical Society; its Relation to Medical Progress and to the Community in which we practise."

THE ANNUAL DINNER

was served in the Clarendon Street Rink, and was attended by upward of nine hundred of the fellows. Speeches were made by Dr. Gage, Governor Ames, Mr. G. M. Stearns, Rev. Brooke Herford, Col. Higginson, Dr. J. P. Reynolds, Mr. H. M. Shepard, and Mr. R. Wolcott.

WHITE BREAD *vs.* BROWN BREAD.—In a paper published in the *Quarterly Bulletin* of the New York Post-Graduate School, Dr. Geo. D. Hays says: "We have long been accustomed to hear that many of the evils of modern life owe their origin to our choice of *white* flour. That this is not so an examination of the wheat-berry will show. This has five coats—an epi-, meso-, and endocarp, an episperm, and a tegmen. The three outer ones have no value whatever as nutriment. Within the episperm is a layer of gluten-cells, chiefly albuminoids, and, finally, in the endosperm, which constitutes the bulk of the grain, we find starch mingled with albuminoid cells. In the old process of milling, the perisperm (the part within the episperm) was, on account of its close attachment to the inner husk, largely carried away, leaving the bolted flour the poorer for its loss. Hence the vegetarian, Sylvester Graham, whose name is applied to bread made from unbolted flour, was correct in his time in saying such bread contained the most nutriment. The present 'gradual reduction' process saves this portion of the wheat. The bran itself is composed of woody fibre, and contains absolutely no nutriment. It may have a mechanical value in those of a constipated tendency, but this is all. The wheat loaf and the white flour contain a much larger percentage of phosphates and gluten than the Graham loaf or unbolted flour."

Correspondence.

OUR BERLIN LETTER.

LEIPSIC AS A MEDICAL CENTRE—MEETING OF THE ANATOMICAL SOCIETY—PROFESSOR OLSHAUSEN—SCHROEDER'S MEDICAL WORK—THE SOCIETY OF GERMAN NATURALISTS AND PHYSICIANS—THE GERMAN PUBLIC HEALTH ASSOCIATION—DR. LIEBERKUHN—THE GERMAN SURGICAL CONGRESS.

May 1, 1887.

LEIPSIC is a medical centre of considerable interest. It may be rather more so to your correspondent than to your readers, for under the tuition of Cohnheim and Crede he spent a most pleasant and profitable semester here years ago. A visit here was in many respects pleasant, in others sad. Cohnheim has long since died. Weigert has removed to Frankfort, and Huber was absent from the city. Crede has laid down the reins to younger and stronger hands, being now seventy years of age and in poor health. He has been succeeded by Professor Zweifel, of Erlangen. Birch Hirschfeld is filling the place of the lamented Cohnheim to the satisfaction and edification of all. The University of Leipsic, medical department, had during the winter semester, 1887, 781 students.

The Anatomical Society, founded in Berlin in September last, held its session in the anatomical institute of the University of Leipsic recently. The meeting was, for so young a society, quite well attended, and interesting. The following papers among others were read: "The Asymmetry of the Face," by Dr. C. Hasse, of Breslau; "Observations on the Brain of Man," by Dr. M. v. Lenhosek, of Pesth; "The Mechanism of the Wrist-joint," by Professor Braune, of Leipsic; "The Development of the Pigment of the Skin, and the Nourishment of the Epidermis," by Dr. Karg, of Leipsic; "The Traces of Parietal Eyes in Man," by Professor Bardeleben, of Jena; "New Methods in the Field of Experimental Embryology," by Dr. Gerlach, of Erlangen. Interesting demonstrations in great numbers were made by different members. Professor A. v. Koelliker, of Wurtzburg, was president of the Society. The membership was 190, of which 78 were foreigners.

The most interesting part of the meeting, it can readily be conceived, was the social part. The evening before the first day a reception was given at the Russischer Hof. On the evening of the last day the members returned again to the same place for their banquet. Dr. Koelliker toasted Emperor Wilhelm and the Saxon royal family, also the rector magnificentissimus of the Leipsic University. Dr. His, of Leipsic, gave an account of the life and development of the new society *ab ovo*, and was followed by a number of other speakers who kept the guests roaring with laughter.

Professor Olshausen, of Halle, has been called to the chair in the Berlin University made vacant by the death of Schroeder. He made his first appearance before the students on the morning of May 5th. He made a very feeling address, speaking of his predecessor in the most tender terms. The first literary work of Schroeder showed unusual ability. It was a little brochure on "Hæmatoma Retrouterina." Schroeder was the first in Germany and the world to use prevention of infection in ovariotomy. Marion Sims thought we should treat the infection, Schroeder thought we should prevent it. These two had long discussions on this point. The speaker then dwelt at length on Schroeder's influence in the field of abdominal surgery. Especially was Schroeder most useful in the field of operations. He has to a great extent perfected that most dangerous of gynecological operations, myotomy. High amputation of the cervix, washing out of the carcinomatous cervix, and separation of the cervix from the body, is the work of Schroeder; also the wedge-shaped excision of the cervix in benign degeneration.

In total extirpation of the uterus he labored fruitfully. He thought that the cervix in pregnancy remained intact, and that the ring of contraction was not the internal os. He taught us much on the mode of action of expulsion in labor. Professor Olshausen spoke next of Schroeder's text-books, "Gynecology" and "Obstetrics." He complimented their accuracy and brevity. He spoke positively when he discussed a subject, and did not confuse the learner by theories and opinions. He spoke of him as a teacher, man, and physician. He loved his scholars, who filled his amphitheatre to the last place. Quiet consideration, quick conclusion, and firm treatment were Schroeder's. He treated fewer cases palliatively, but sought by means of operations to effect a radical cure.

Schroeder's memory was honored recently by a meeting in the University at the call of the Berlin Obstetrical and Gynecological Society. A large number of distinguished persons, medical and non-medical, were present. Among others were the widow and the nine children of the lamented gynecologist.

Professor Kaltenbach, of Giessen, succeeds Professor Olshausen as Professor of Obstetrics at Halle.

The sixtieth session of German Naturalists and Physicians will be held at Wiesbaden, September 18th to 24th next.

The German Association of Public Health will convene in Vienna, September 26th to October 28th, to meet with the International Hygienic and Demographic Congress. The latter will meet in the University building. All governments are requested to send delegates.

Dr. Nathaniel Lieberkuhn, Professor of Anatomy at the University of Marburg, and son of the discoverer of Lieberkuhn's glands, died recently at the age of sixty-five.

The sixteenth session of the German Congress of Physicians was held in Berlin in April. Professor Volkmann, of Halle, was president, and Dr. Guilt, of Berlin, was secretary. Professor v. Bergmann, of Berlin, was elected president for next year. The session was of great interest, but a full report is impossible here. The following are a few selections from the mass of matter presented:

Dr. Sonneberg, of Berlin, read on the subject of Arthropathia Tabidorum. From an anatomical standpoint, he urged the fact that in all cases of disease of the joints existing with tabes there is present, in a greater or less degree, arthritis deformans. It is distinguished from the usual arthritis deformans only through a more rapid course and increase of action. Otherwise the characteristic symptoms of tabes are present. A much more extensive exudation into the joint is found, and while the dislocation in arthritis deformans is progressive in character, the arthropathia tabidorum is oftener retrogressive. Luxations occur just as often from retrocapsular osteophytes projecting from the periosteum. In reference to the casual connection of the affections of the joints with the tabes, the author thought the theory recently promulgated by Charcot, that the fractures and disease of the joints were to be referred to purulent collection, was the true one. This opinion has recently received anatomical support. Recent investigators, as Oppenheim and others, have found a degeneration of peripheral nerves. Through this the connection between disease of the joints and tabes is brought a little closer and answered in a positive manner. Therapeutically, expectant treatment is mostly to be followed.

Professor Volkmann, of Halle, raised the question whether single collections, which have been frequently observed recently in those suffering from tabes, are not preceded by syphilis; for surely syphilis predisposes the origin of tabes.

Dr. Rotter, of Berlin, demonstrated a number of preparations from patients which had suffered from neuropathic joint affections and the most varied forms of tabes, and spoke briefly concerning them.

Dr Kroenig, of Berlin, has observed three cases of tabes in which the spinal column was peculiarly deformed and showed spondylisthesis. Therapeutically, the use of corsets made of whalebone after Beely's plan were of much benefit.

Dr. Koegel, of Halle, had observed seven cases of tabes. In only two of these did deformity of the bone occur to any degree. This, however, disappeared under the proper treatment. He spoke of the influence of traumatism in the causation. The local cause of joint affections spoken of by Virchow is often found present. A traumatic influence acts on the part, and, on account of the spinal cord being diseased, infects the substance. Not only rupture of the bones but also of the capsule can occur. The infrequent occurrence of rupture of the tendons is proved by the trophic disturbance of the fibrous places.

For the origin of fractures of the joints we infer the presence of an unusual fragility of the bones; however, this is not necessarily always present. In the cases of fracture of the joints which he had treated, the contrary was the case, the bones being quite hard. Perhaps the bulging in of the masses of connective tissue is the primary cause of the fracture.

Professor Volkmann said there were two kinds of bone-fragility. One is found in thinned bones, the other in quite strong bones. In the latter, healing follows promptly. The only explanation of a failure to unite is the disturbance of organic bone-substance.

"The Operative Treatment of Urethral and Vesical Fistula" was the subject of a paper by Professor Woelfler, of Gratz, who said that in the removal of the defects of the urethra and bladder we have made decided advances. We however have reached a limit. Our inability to obtain success is often caused by the fact that the defects are too large to permit of the borders being brought together. This is true in the case of the bladder as well as of the urethra. Another reason of difficulty in attaining our aim is the fact that not enough mucous membrane is present to suffice. The author wished therefore to present a plan of operating which would answer in case of necessity in place of the typical operation. He divided the fistulæ into cicatricial and purulent. When we find defects of the urethra present, we suppose that the canal is permeable. In one case of Woelfler's, however, there was a cicatricial traumatic urethral fistula which presented the exact condition of a rectal fistula. There was a dilatation of the part leading to the fistula, and the part leading from it was obliterated. It was found necessary to make a section of the constricted part, which was done, and fifteen peri-urethral sutures were passed, besides numerous small sutures of the mucous membrane. The result was entirely satisfactory and no stricture occurred in consequence. This kind of an operation is the type for the kind of cases first named. The second group consists of those fistulæ which are present from phlegmonous processes and infiltration of the urine. In these cases the borders should be cut loose and peri-urethral sutures should be then applied.

Dr. Woelfler also reported his experience in the effect of ligature of the thyroid artery in goitre. We must think first of the anatomical connection of artery when we wish to induce shrinkage of a goitre by the ligature of the arteries which lead to the thyroid gland. Ligature of the superior thyroid in dogs does not cause advancing gangrene, but necrotic processes form and complete destruction of the tissue without that of the capsule. Woelfler's first ligature of this artery in man was in the case of a woman aged forty-five, in whom it was done in consequence of an error of diagnosis. The patient came to the clinic with a high grade of dyspnœa, and said that the goitre which was present had been of the same size for years. The reporter thought he had to deal with a benign condition, which, however, later proved to be carcinoma. The ligation was smoothly done, the recovery was without a bad symptom, and the patient left the institution in four weeks. The dyspnœa was gone and the circumference of the neck was less. In four weeks, however, the difficult breathing returned and the patient

came again to the hospital, where a little later she died. On post-mortem examination the author found that the *right half* of the thyroid gland was notably diminished in size in consequence of a necrobiotic process. He was convinced that the arteries at the place of ligature were obliterated and that peripherally they were callous. This condition of necrobiosis proved that the difficult breathing, in consequence of collapsed goitre, disappeared immediately, but on the other hand the dwindling of the goitre went on very slowly. The manner in which the necrosis completed itself was shown by the reporter, upon a patient in whom he had ligated only the right superior and inferior thyroid arteries. The difficult breathing disappeared immediately. The circumference of the neck lessened only gradually; but was reduced from 44 to 38 centimetres. The reporter feared that a compensatory hypertrophy of the left side would take place. The opposite however occurred. Not only the isthmus, but also the left half of the thyroid gland, shrunk. In malignant goitre one should not undertake to ligate, because the compensatory circulation is not sufficient. In struma, however, total extirpation by the ligature of the superior and inferior thyroid artery can be compensated.

"The Action of Iodoform" was the subject of an article by Dr. De Ruyter, of Berlin.

Dr. v. Tischendorf, of Leipsic, reported a case of enterostomy for congenital atresia of the ileum. He presented the specimen, which had been brought to him on the sixth day of life for treatment. The doctor thought he had a case of atresia of the colon to treat, as this is sometimes congenital. Laparotomy showed an atresia of the ileum, 25 ctm. above the cæcum. The child lived only fourteen days after the operation. It did not vomit any more, but died from general weakness.

OUR LONDON LETTER.

(From our Special Correspondent.)

THE MEDICAL COUNCIL AND THE SOCIETY OF APOTHECARIES—SIR WILLIAM GULL ON THE VALUE OF DRUGS—INTESTINAL SURGERY—THE FREQUENCY OF TUBAL DISEASE.

LONDON, May 13, 1887.

THE Medical Council met again on Tuesday last, for the third time within twice as many months. Although some other business has to be disposed of, the chief subject for consideration, and that for which the Council has really been summoned now, is the question of the Society of Apothecaries. Are they to be snuffed out, or is the Council to accord them recognition and erect them into an independent examining body by appointing surgical examiners, as the Society now asks them to do? Such examiners already exist, but they have not been appointed by the Council under the new act, and are not, therefore, officially recognized. There can be little doubt that the Council will comply with the request made to them. Such, at any rate, is the natural conclusion to be drawn from the defeat yesterday of Dr. Struthers' amendment by nineteen to nine votes. The discussion had lasted three days. It was dry enough in conscience, and was rendered still more so by the amount of legal matter some of the speakers thought fit to interpolate. A few incidents relieved the dry monotony of the proceedings. Dr. Struthers denounced the Apothecaries' Society as a mere trading corporation, and excited some risibility in his audience by describing a visit he had lately paid to the retail department. He proceeded to exhibit a bottle of tincture, some pills, and a bottle of eau-de-cologne which he had purchased. Sir Walter Foster (with an obvious desire to pose to advantage before his constituents) said that he was glad that Dr. Struthers had introduced something in the shape of bottles that recalled to their minds the humbler branches of the profession, which were doing good and useful work in the community. Sir William Gull returned to the trade question at a later stage of the debate, and took the opportunity to decry the treatment of disease by drugs. When the Prince of Wales was ill of typhoid fever, how many doses of drugs, he asked, did the prince take? Of course, any other patient would have done as an illustration, but Sir William Gull would thereby have missed his opportunity of reminding his auditory that *he* was the physician in charge of the Prince of Wales on that occasion. He concluded his speech by remarking that, whatever might be said of general practitioners (and he had evidently nothing good to say of them), there was one universal practitioner better than all of them when you were sick, viz., a warm bed (with, of course, Sir William Gull sitting at the bedside to see to the gruel and beef-tea, and to prevent any low-bred general practitioner from doing such an improper thing as give a dose of medicine).

The last meeting of the Medical and Chirurgical Society was devoted to intestinal surgery. Mr. Barker opened the ball by narrating a case on which he had operated with success, in University College Hospital. A married woman, aged twenty-eight, came under treatment for chronic bowel trouble. For sixteen months before admission she had passed blood with the motions, and during the latter half of this time had been conscious of the presence of a foreign body in her rectum. On making an examination, an intussusception of the rectum of about three inches in length was found, and surrounding the apex of the intussuscepted portion a mass of new-growth. The latter infiltrated the coats of the intestine, and was judged to be malignant. The intussusception could not be reduced, and Mr. Barker therefore determined to remove it along with the new-growth. The intussusception having been drawn down, the left index-finger was passed well into the intussusception, and the two layers of bowel, whose peritoneal coats were opposed, were pinched together beyond the growth between the finger and thumb. They were then stitched together by interrupted sutures. When the entire circumference of the bowel had thus been encircled with a row of stitches above the growth, a second row was similarly introduced about half an inch higher up. The whole mass was then cut away between the two rows of stitches. Only one small vessel bled, and was tied. The growth was found to be a mass of adenoid epithelioma with a margin of healthy tissue above it. The patient's recovery was rapid and uninterrupted, and she remained well a year after the operation. Mr. Barker referred to the rarity of intussusception of the lower bowel, produced by malignant growths, and said he had only been able to collect eleven cases. Six of these were either purely rectal or in the sigmoid flexure. Of this number, four were operated on; but two of these (cases of Professor Verneuil) died. Of the remaining two, one was operated on by Kulenkampoff, with an ultimately good result, though a loop of small intestine was opened in performing the operation, and a provisional colotomy had to be done. The fourth case was his own, and made the second successful one on record.

A paper by Mr. Stanmore Bishop was then read, in which were detailed the results of some experiments which he had performed on animals for the purpose of determining the best form of suture to unite the divided ends of the bowel after excision of small portions of the small intestine. He preferred one which he had himself devised. As in Lembert's suture, the serous surfaces of the intestinal wall were inverted and kept in contact by the sutures, but the latter were continuous and were passed from the inside. The knots, also, were so arranged that they fell into the lumen of the bowel instead of into the abdominal cavity. Mr. Croft defended Lembert's method, and remarked that, as thousands of sutures had fallen into the abdominal cavity without any bad result, he did not think it very important to prevent it. Mr. Treves remarked that he had himself experimented on the intestines of dogs by many methods, and had finally fallen

back on Lembert's as the best. He protested against drawing conclusions from experiments made on dogs. A clumsy stitch of any kind would succeed in uniting a dog's intestine. Mr. Knowsley Thornton objected to Mr. Stanmore Bishop's method; that the passing the sutures from the inside of the bowel to the outside might allow septic matter to pass into the peritoneum. The continuity of the suture, also, might lead to sloughing. Sir Spencer Wells commended Mr. Stanmore Bishop's plan, but it was quite clear that in the opinion of the majority of the speakers Lembert's suture still deserved to hold the first place.

Diseases of the Fallopian tubes have hitherto been considered rather infrequent, and many have not been slow to hint at exaggeration on the part of observers who profess to encounter them with tolerable frequency. Mr. Lawson Tait, in particular, has been for years about as much abused as it is possible for a man to be. Clinical observations are naturally open to fallacies, but those made on the dead body are incontrovertible. The matter has recently been tested in this manner by Dr. Lewers, Assistant Obstetric Physician to the London Hospital, and he has found evidence of tubal disease (restricting the expression to hydrosalpinx, pyosalpinx, and hæmatosalpinx) in seventeen cases out of one hundred bodies of women dying in the London Hospital from various diseases. The cases were not selected, but consecutive, and no one of these seventeen cases came from the obstetric wards, though some of the one hundred cases examined did. This is a sufficiently startling conclusion, and points to a much greater frequency of these diseases than either clinical or pathological observers have hitherto supposed.

Army and Navy News.

Official List of Changes in the Stations and Duties of Officers serving in the Medical Department, United States Army, from June 5 to June 11, 1887.

FRYER, B. E., Major and Surgeon. Granted sick leave for one month. S. O. 28, current series, Division of the Pacific, amended by S. O. 29, Division of the Pacific, June 2, 1887.

TREMAINE, W. S., Major and Surgeon. Sick leave still further extended two months on account of sickness. S. O. 129, A. G. O., June 6, 1887.

APPEL, A. H., Captain and Assistant Surgeon. Granted six months' leave of absence on surgeon's certificate of disability. S. O. 127, A. G. O., June 3, 1887.

Official List of Changes in the Medical Corps of the United States Navy for the week ending June 11, 1887.

VAN REYPEN, W. K., Surgeon. Ordered, June 8th, for examination preliminary to promotion as Medical Inspector.

ROBINSON, SOMERSET, Medical Inspector. Ordered, June 20th, before a Retiring Board, convened at Mare Island, Cal.

CONTAGIOUS DISEASES—WEEKLY STATEMENT.—Report of cases and deaths from contagious diseases reported to the Sanitary Bureau, Health Department, for the week ending June 11, 1887:

	Cases.	Deaths.
Typhus fever	0	0
Typhoid fever	8	1
Scarlet fever	50	8
Cerebro-spinal meningit	10	9
Measles	39	5
Diphtheria	104	45
Small-pox	8	2
Yellow fever	0	0

Society Items.

AMERICAN MEDICAL ASSOCIATION.

THE following are added to our telegraphic report last week:

The *Medical Standard* (Chicago) and the *Chicago Medical Journal and Examiner* published very acceptable daily editions during the meeting of the American Medical Association. The former was under the lively reportorial and editorial management of Dr. J. R. Gray, and the latter had the highly commendable feature of being published without the aid of advertisements.

Dr. Ely Van de Warker, of Syracuse, N. Y., was elected Chairman of the Section on Obstetrics and Diseases of Women, and Dr. E. W. Cushing, of Boston, Secretary.

The following eminent gentlemen were elected on the last day of the Convention, in conformity with the new by-law, to deliver addresses in the general sessions of the next annual meeting:

Address on General Medicine, Beverly Cole, M.D., of San Francisco.

Address on Surgery, E. M. Moore, M.D., of Rochester, N. Y.

Address on State Medicine, Jas. L. Cabell, M.D., of Virginia.

Drs. J. M. Toner, of Washington; E. Grissom, of Raleigh, N. C.; and D. Colvin, of Clyde, N. Y., were appointed a committee to inform these gentlemen of their election, and to fill vacancies in case of either death or declination.

On resolution offered by Dr. J. B. Hamilton, Surgeon-General Marine Hospital Service, and supported by Dr. G. H. Rohe, of Baltimore, the resolution introduced by Dr. J. McF. Gaston, of Atlanta, providing for a committee to ask President Cleveland to appoint two additional members on the committee sent out by the Government to investigate the subject of yellow-fever inoculation, was rescinded.

Committee on the Criminality of Fœticide: Drs. I. N. Quimby, of Jersey City; W. B. Atkinson, of Philadelphia, and W. H. Byford, of Chicago.

Committee on Coroners: Dr. H. O. Marcy, of Boston; J. H. Burge, of Brooklyn, and W. W. Dawson, of Cincinnati.

Committee on Immigration Sanitation: Drs. A. N. Bell, of New York; H. A. Johnson, of Illinois, and J. H. Kellogg, of Michigan.

The address on Surgery, by Dr. Mudd, of St. Louis, who was unavoidably absent on account of sickness in his family, was referred to the Committee on Publication. Dr. Scott, of Cleveland, was prevented from preparing the address on Ophthalmology and Otology on account of the death of his wife.

Dr. N. S. Davis' resolution on graduates of dental and oral schools or colleges being recognized as members of the regular profession of medicine, and also his resolution concerning the annual dinner of the Association, were adopted.

Committee on Dietetics: Drs. A. E. Wood and Frank Woodbury, of Pennsylvania, and Frank H. Whittemore, of Connecticut.

Committee on Uniformity of Medical Legislation: Drs. P. H. Millard, of Minnesota; H. A. Johnson, of Illinois; R. H. Plummer, of California; C. B. Belt, of Massachusetts; and C. W. Dulles, of Pennsylvania.

The member of the Judicial Council is Benjamin McCluer, instead of A. W. McCluer, of Iowa.

The Secretary of the Section on Ophthalmology is Dr. Edward Jackson, of Philadelphia.

The register contained nearly twelve hundred and fifty names.

The Medical Record

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Original Articles.

DANGERS AND ACCIDENTS OF INTUBATION.

BY DILLON BROWN, M.D.,
NEW YORK.

THE accidents of intubation of the larynx are many, but the *unavoidable* accidents are few, and, with the exception of pushing down pseudo-membrane before the tube —which is a rare complication—they are not important. I shall discuss, *first*, those accidents which can be and should be avoided, due to lack of skill, carelessness, or imperfect instruments, and *second*, the unavoidable accidents, and *last*, some of the dangers of intubation, theoretical and practical.

Avoidable accidents.—1. Asphyxia from prolonged attempts at introduction.

2. False passages made in attempts at introduction.

3. Asphyxia from slow accumulation of secretions in the tube.

4. Slipping of tube into the trachea.

5. Asphyxia from swelling over the head of the tube.

6. Passing the tube into the œsophagus.

7. Injuries to the larynx in attempts at removal.

8. Miscellaneous.

Unavoidable accidents.—9. Pushing down pseudo-membrane before the tube.

10. Fatal obstruction from fragments of membrane in or below the tube.

11. Coughing out of the tube.

Dangers, theoretical and practical.—12. Shock of the operation.

13. Inspired air being septic and causing pneumonia.

14. Food and liquids entering the bronchi.

15. Ulcerations due to the pressure of the tube.

16. Œdema, from various causes.

17. Dangers from applications by means of the tube.

Asphyxia from prolonged attempts at introduction.—The tube, in most cases, should be inserted into the larynx quickly, and on the first trial. Every additional attempt and every prolonged one is harmful; but there is less injury done by several short trials at introduction than by a single prolonged one, even if successful.

False passages made in attempts at introduction.—In cases of acute stenosis the tube slips easily into the larynx, and it requires no more force to push it well into position than it does to pass a sound through the healthy urethra. In the two cases which have come under my notice of false passages made in attempts at introduction, an unjustifiable amount of force was used to push the tube in place. In both of these, its insertion caused a complete cessation of respiration, which was supposed to be due to the pushing down before it of membrane. The autopsies, however, showed that in the first case the tube had entered one of the ventricles of the larynx, and was forced down through the surrounding tissues along the outside of the trachea. In the second case there was a rupture through the wall which separates the œsophagus and the trachea, and respiration was prevented by the pressure of the tube against this yielding membranous division.

Asphyxia from the slow accumulation of secretions in the tube.—In a certain proportion of cases, especially in those in which the patient is weak and coughs but seldom, and in which the amount of secretion is small, the tube gradually becomes lined, sufficiently to cause obstruction, with a mixture of what seems to be mucus and pus. Although this is not a common complication, and can be prevented to a great extent by the faithful use of the steam atomizer, it is well to be on our guard against it, and in all cases of secondary dyspnœa to remove the tube, and make sure that it contains no obstruction.

Slipping of the tube into the trachea.—This is an accident which, I believe, has never happened, and which, I believe, never can happen when a proper-sized tube is used, except as a result of injuries to the larynx made in attempts at removal. If the extractor is passed into the larynx, but outside of the tube, and is forcibly withdrawn with its blades widely open, great damage will be done to the larynx. It is possible in this manner to split open the cricoid cartilage, and so enlarge the opening of the glottis as to allow the head of a tube to slip through the larynx into the trachea. This is an accident which can always be avoided.

The occurrence of this accident has been reported three times, but it seems to me that a careful analysis of these reports will show that such has not been the case. It should be remembered that the head of the tube, even if pushed below both the ventricular bands and the true cords, will still remain in the larynx, being held by its narrow, sub-glottic division. Again, as the head of the tube is smaller than the calibre of the trachea, it would fall by its own weight until its lower end was arrested at the bifurcation or became lodged in a bronchus. Therefore, if this accident should happen, the tube could not be felt by the finger, and neither could it be grasped and removed by the extractor in the usual manner. In Dr. Waxham's case, after anæsthetizing the child, the tube was grasped by the extractor and removed without force in the usual way. He bases his diagnosis on the presence of a croupy cough and the ability to swallow easily. These symptoms would also appear if the head were retained in the sub-glottic division of the larynx. In Dr. Eichberg's first case an old-fashioned, small-headed tube was used, and it was pushed down in attempts at removal. Although the case is not reported minutely enough to state positively whether the head was in the sub-glottic division of the larynx or in the trachea, it seems to me that the evidence would indicate the former place rather than the latter as its position. The diagnosis of its position was apparently based upon the fact that it had been pushed below the true cords, the retaining power of the sub-glottic portion of the larynx being ignored. After this an unsuccessful attempt was made to remove it, from which I inferred that it could be felt by the extractor. Again, the child's breathing was perfectly easy, and upon opening the trachea the head of the tube was found above this opening. In Dr. Eichberg's second case the tube, also one of the early ones, slipped through the chink of the glottis, and was therefore supposed to be in the trachea. Of the three cases reported, in one of them the head of the tube was not in the trachea; and in the other two, an old-fashioned, small-headed tube was used, and its position in the trachea was not demonstrated. When there is much swelling over the head of the tube, it may be erroneously supposed to have slipped below the cords.

Asphyxia from swelling over the head of the tube.—This is a complication easily overcome by inserting a tube

with a larger head. It has occurred in two of my cases, and in the first one I did not recognize the cause of the secondary dyspnœa until the autopsy, after the child had died from asphyxia. It is a good plan, before removing the tube in cases of secondary dyspnœa, to exclude this accident, as its cause, by a digital examination of the larynx.

Passing the tube into the œsophagus.—There should be no difficulty in determining whether the tube is in the larynx or in the œsophagus, although this mistake has been made in two cases which have come under my notice; and in both of them the child died from asphyxia. After coughing up the tube, it has been swallowed several times, and in attempts at introduction it has been lost in the stomach a number of times. In all these cases its presence caused no trouble, and if the patient recovered, it was passed per rectum without difficulty. In one case, where it was thought to have been swallowed, it was unexpectedly expelled from the larynx several days later, and in another case it was found in the pocket of one of the other children.

Injuries to the larynx in attempts at removal.—In removing the tube no force is required; and in cases in which the extractor comes away with difficulty, it is because it is caught in the tissues of the larynx, and much injury will be done if it is forcibly removed with the blades widely open. Not only will you lacerate the larynx, but may even split open the cricoid cartilage, and so enlarge the chink of the glottis that on the next attempt to remove it you will push it into the trachea. This accident has happened in practice on the cadaver.

Miscellaneous.—At times, after the removal of the tube, there occurs a spasm of the glottis from the irritation of the inspired air upon the larynx, which has been protected so long. This can be avoided to a great degree by giving an opiate just before its removal, but it is always advisable, before removing the tube, to have everything prepared for its immediate reinsertion, if necessary. This rapid return of the dyspnœa may also be due to a diphtheritic paralysis of the abductors or to an œdema of the glottis. The string should be of strong braided silk, not only to prevent its breaking, but to prevent the more serious complication of its untwisting and catching in the eye of the tube, so that it cannot be withdrawn without removing the tube. The string should be cut as short as possible and withdrawn slowly to prevent its cutting the surrounding tissues. The lacerations made by the gag, and by the finger in locating the larynx, are unimportant.

Pushing down pseudo-membrane before the tube.—This is the gravest accident which the operator can encounter, but fortunately it is an extremely rare one. On the first introduction of the tube, sufficient membrane has been pushed down to cause asphyxia in only one of Dr. O'Dwyer's cases, and in two of my own. In each case, after withdrawing the tube, the obstruction was expelled and the dyspnœa relieved. Later, when the membrane has become more or less detached and broken down, upon the reintroduction of the tube, the liability to this accident is increased. In connection with this danger, one point regarding the introduction of the tube must be closely observed. The tube should be pushed well down in position, and held down by the finger while the obturator is being removed. Otherwise, when it is pushed into position after the removal of the obturator, the lower end is unprotected, and can easily strip off enough membrane to cause obstruction at that point. Upon the eintroduction of the tube I have pushed down sufficient membrane to cause obstruction in four cases, but in only one of these was it a fatal obstruction. This occurred eighteen days after the first intubation, and shows how long the membrane will sometimes persist.

Other accidents, and those avoidable ones, may be mistaken for this—*e.g.*, apnœa from prolonged attempts at introduction, pushing the tube through a ventricle of the larynx, and other false passages, etc.

Fatal obstruction from fragments of membrane in or below the tube.—This is also a rare accident, and it has not occurred in any of my cases. If the tube becomes obstructed, it will usually be expelled, and it is on this account that it is advisable to have it retained in the larynx as loosely as possible. Certainly, the number of deaths from clogging of the tube after intubation, as shown in the reported cases, compares in a remarkably favorable manner with the number of deaths from the same cause after tracheotomy.

Coughing out of the tube.—This is undoubtedly a source of danger, but it can be entirely obviated by making the retaining swell of the tube sufficiently large. It is intended by Dr. O'Dwyer that the tubes be held loosely in the larynx, so that when they are no longer needed, or become obstructed, they will be expelled. After being coughed out, if the dyspnœa does return, it is usually several hours before it becomes extreme, and there is time to reach the patient and reinsert the tube. In my own practice I have had one death from laryngeal obstruction after coughing out of the tube. It was a boy fourteen months old. I removed the tube on the fifth day, but was compelled to reinsert it the next day. From this time the tube was frequently expelled, being retained from five to sixteen hours. I had a special tube made with a very large retaining swell, but it was apparently expelled as easily as the others. There was paralysis of the pharyngeal muscles, and of the external rectus of the eye, and it seems to me that the cause of the frequent expulsion was a paralysis of the muscles of the larynx. There was usually time to reach the child and reinsert the tube; but on the twenty-eighth day it was some time after the expulsion of the tube before I was sent for, and when I reached the patient two and one-half hours after it was coughed out, he was dead. I obtained the larynx, and there were no macroscopical appearances to account for the return of the obstruction.

Shock of the operation.—This is very slight when the operation is done quickly and skilfully. In a certain number of cases of laryngeal diphtheria, soon after intubation, the temperature begins to rise, and the condition of the patient rapidly grows worse. However, this occurs just as frequently after tracheotomy, and it does not occur after intubation of the larynx for stenosis due to other causes—*e.g.*, syphilitic stenosis or catarrhal croup. Therefore, it seems to me that this change is not due to the operation itself, but is the result of relieving the laryngeal obstruction, this acting in some manner as an antipyretic. We know that nitrogen acts as an antipyretic, and may not its action be due to its cutting off the supply of oxygen rather than to any effect of its own?

Inspired air being septic and causing pneumonia, and *food and liquids entering the bronchi.*—My experience has been that the cause of death, when due to pulmonary complications, is, in the vast majority of cases, not pneumonia, but an extension of the disease to the bronchi—a diphtheritic bronchitis. Again, pneumonia is not a common complication of diphtheria when the larynx is not involved, although the same condition exists—the inspired air is septic. If the extension of the disease could be caused by this contaminated air, we would expect laryngeal or bronchial diphtheria to occur oftener, for in not one case of diphtheria out of ten is the larynx or the bronchi involved.

In no autopsy at the New York Foundling Asylum has food ever been found in the bronchi, and I believe that this is a theoretical danger rather than a real one.

Ulcerations due to the pressure of the tube.—That ulceration may originate in this way is without question, but this will be fully discussed in the paper on the pathology of the larynx after intubation. In none of the cases reported has the presence of the tube caused any harm. Certainly the tracheotomy tube does do injury, and it is not very rare to see cases of retained tracheal tubes due to granulations, incurvation of the wound, etc.,

and occasionally also death from hemorrhage following ulceration through a blood-vessel.

Œdema of the larynx; local applications.—In cases of laryngeal diphtheria the stenosis is due not so much to the pseudo-membrane as to the swelling of the tissues beneath it. The pressure of the tube diminishes this swelling in a marked degree, besides hastening the disappearance of the membrane, if not even preventing its formation. This can be demonstrated at nearly every autopsy on cases dying after intubation. In making local applications by coating the tube with strong astringents, it is possible to cause an œdema of the glottis, which takes a long time to disappear. I lost one case from this cause, due to the too enthusiastic application of an ointment of nitrate of silver—3 ij. to ℥ j.—just after reviewing the works of Dr. Horace Green. An application made in this manner is not one of short duration, but extends over several hours, or even days. Lacerations made in attempts at insertion or removal may set up an œdema.

102 East Fifty-seventh Street.

TRACHEOTOMY FOLLOWING INTUBATION OF THE LARYNX.[1]

By IRWIN H. HANCE, M.D.,

Resident Physician Nursery and Child's Hospital, New York.

My object in writing this paper is to report in detail a case where tracheotomy was performed after the tube had failed to give relief in a child suffering from membranous croup and scarlatina.

The following is a history of the case: Alfred J——, aged twenty months. Father English; mother Irish. Admitted to the hospital October 16, 1886. Nursed for eighteen months. Has had measles. Is well nourished, but pale. No glandular enlargement.

October 22d.—Appeared sick during day. Throat red. Slight elevation of temperature.

October 23d.—Well-marked diphtheritic patches on the tonsils.

October 24th.—In the morning was a little croupy; continued with croupy cough during the day, and was vomited three times, the symptoms thus being relieved. Child has developed a well-marked scarlatinous eruption.

October 25th.—At 10.30 A.M. child was much worse, there being well-marked dyspnœa, with recession of chest-walls, cyanosis, and other signs of laryngeal stenosis. At 10.45 a tube was introduced (No. 2), and almost immediately coughed out, along with much thick mucus; operation was again repeated with a like result. When the tube was introduced for the third time it became obstructed, and caused a serious embarrassment of breathing. It was removed at once, and there was almost complete cessation of respiration, but artificial respiration revived the child in a few minutes.

Dr. Wheelock, the attending physician, then advised that laryngotomy should be performed if the next introduction of the tube failed to give relief. At 11.30 A.M tube was reintroduced. At the end of ten minutes it was removed, and was found to be plugged with such thick mucus that almost a cast of the tube was formed. Cleansed and once more inserted; this time the respirations improved for a short time.

At 12.10 P.M. respirations worse, tube coughed up. Rapid incision was made through the crico-thyroid membrane and the cr coid cartilage, affording the child immediate relief. Wound was held open by retractors and the trachea thoroughly cleansed from mucus. Small hard rubber tracheal tube introduced. From this time on there was not the least return of any dyspnœa.

At 7 P.M. child was quietly sleeping, breathing without any apparent effort. No cyanosis existed, and the scarlatinous eruption had entirely returned. Was able to take liquid food. Temperature during the night reached 106⅘° F. Failed slowly and died at 8 A.M., October 26th, from the systemic poisoning of the two diseases.

Necropsy was held twenty-six hours after death by the pathologist, Dr. N. H. Henry. Rigor mortis absent. Marked post-mortem ecchymosis. An incision passes through crico-thyroid membrane and cricoid cartilage; edges of wound are in a fair condition. Trachea shows an abundant fibrinous exudation, which is easily lifted from the surface. Lungs: Slight hypostatic congestion. Pericardium: Increase in the amount of pericardial fluid. Heart: Valves normal; muscular tissue pale. Liver and spleen congested. Kidneys somewhat enlarged. Increased amount of cortical substance. Medullary portion very pale. Capsules easily separated. Brain not examined.

In reviewing the history of this case I may emphasize the statement that the tubes were given a thorough trial and proved utterly useless. Now, what was the cause of this failure on the part of the tube to relieve the child's symptoms? It seems to me that two things conjoined to bring about this result, viz., an excess of thick, tenacious mucus in the trachea and a partial dislodgement of the false membrane by the introduction of the tube. The former was present to a marked degree, and we may safely assert that some membrane was dislodged, because on one occasion after the withdrawal of the tube, artificial respiration was required to restore the child's function of breathing. Was the operation of tracheotomy deferred longer than was necessary? At present, in view of my experience with this case, I think that on another like occasion I should resort to tracheotomy earlier, because many attempts at the introduction of a tube unquestionably cause a more or less decided depression of the child. The selection of the crico-thyroid membrane as the best place to incise the trachea was decided upon because of the ease and rapidity with which the operation could then be performed, one rapid incision being all that was required.

Would the child's chances of recovery have been better if tracheotomy had been performed at first without using the tubes?

This is an extremely difficult question to answer; I can only say that tracheotomy in children under two years of age terminates fatally in a very large percentage of cases, and that intubation gives a fair showing. From my own experience I feel that intubation in such young children gives equally as good results as tracheotomy.

Thus far I have considered only my own case; I ask your attention now to a few other cases which have been reported in the medical papers.

Dr. Ferguson,[1] of Troy, reports a case similar to mine, in which the tube detached a piece of membrane. Tracheotomy was performed; the result was a complete relief to the dyspnœa, although the child died in thirty hours.

Dr. Montgomery,[2] of Philadelphia, did tracheotomy because he was unable to reach the tube with the retractor. He thought that the tube, which, he states, was of small size for the child, had been forced below the vocal cords; it, however, had been coughed up and swallowed, being passed per rectum two days later. This child recovered. Dr. J. Eichberg, of Cincinnati, reports[3] two cases where he had to tracheotomize the child in order to recover the tube:

Case 1, aged seven. After the tube had been in the larynx for six days, he found that it had fallen "by its own weight" down so far as to require tracheotomy in order to remove it; the wound was made through the cricoid cartilage, and he tried to get primary union, but failed, but was obliged afterward to introduce a tracheal tube. Result, recovery.

Case 2, aged three. Five days after its introduction

[1] Read before the New York Academy of Medicine, June 2, 1887.]

[1] New York Medical Journal, March 5, 1887, vol. 45, No. 10, p. 273.
[2] The Medical News, March 5, 1887, vol. 50, No. 10.
[3] Lancet-Clinic of Cincinnati, vol. 18, Nos. 4 and 11, pages 97 and 321.

he sought to remove the tube, but failed, because the instrument, which was an old extractor, slipped, and, in his attempts at removal, he forced the tube into the trachea. By operating he recovered the tube, and the child made a good recovery. Here again he tried to get primary union, but failed, having to resort later to the use of the tracheal tube.

Dr. H. H. Mudel, of St. Louis, seems to have been very unfortunate in his experience of the use of intubation. He reports[1] six cases, in three of which he was obliged to resort to tracheotomy. His notes are scanty, and are as follows:

Case 1, seven years of age. Came near suffocating from loose membrane. Tracheotomy. No result noted.

Case 2, four years of age. Had had intubation tube in for four days. Tracheotomy because there was an excess of secretion, and child was unable to swallow. Result: three weeks have elapsed since the operation, and he thinks child will recover.

Case 3, three to four years of age. Tracheotomy because tube could not be retained. Result: recovery.

Dr. Dillon Brown, of New York, reports one case: Child between one and two years of age. Tube failed to give relief. Cause was supposed to be due to loose membrane. Tracheotomy tube was introduced, but this failed to relieve the child's symptoms, death occurring on the table. Autopsy revealed the probable cause of failure, as the membrane extended down to the third and fourth division of the bronchi.

Thus, of 9 reported cases of tracheotomy following intubation, there were 3 deaths, 5 recoveries, and in one the result was not noted; so we have a very good showing, as to the results of this secondary operation. Further, we must not forget that the operation was performed in one-third of the cases after the tube had been worn from four days up, and consequently to them is due some credit for having tided the child over the most critical period of the disease.

That accidents will occur these cases prove, but accidents of just as serious a nature occur during the performance of tracheotomy; in both, however, they are the exception and not the rule.

The above-described accidents suggest to my mind the following queries:

1. What causes will necessitate the performance of tracheotomy after intubation?

2. Can we avoid any of these causes or accidents?

3. Can we tell beforehand whether intubation is going to fail?

The causes which have called for in the past and may in the future call for operative interference are as follows:

(*a*) An intolerance on the part of the larynx to retain the tube.

(*b*) Inability to administer a proper amount of nourishment to the child.

(*c*) A plugging up of the tube with false membrane and mucus, or a dislodgement of pieces of membrane during the process of introduction.

(*d*) A return of the dyspnœa with an absence of the tube from the trachea, as in Dr. Montgomery's case.

(*e*) A wedging of the tube in the larynx, so that it cannot be removed through the mouth.

(*f*) A forcing of the tube, during its introduction, through the floor of the ventricle in place of passing it into the larynx.

Fortunately we can do something to avert the most of these accidents. Spasm of the larynx, as indicated by a short spasmodic cough, along with a frequent ejection of the tube, can be relieved by cracked ice by the mouth and counter-irritation to the neck. In the way of medication, I have found that full doses of belladonna and nitre, with a small dose of chloral, afford speedy relief to laryngeal spasm.

[1] Weekly Medical Review of St. Louis, vol. 15, No. 3, January 15, 1887.

Inability on the part of the child to swallow will, I trust, soon be overcome by some modification of the present tube. As it is now, we can make use of rectal alimentation and skin inunctions, and when necessary we can feed through a rubber catheter.

When we are certain that the tube has been swallowed, tracheotomy could be postponed if we had another tube of the right size at hand. Wedging of the tube into the larynx, or passing it forcibly through the neighboring tissues will only occur where great violence is used by the operator and can be easily averted.

The only truly serious accident which has thus far been met with in the history of intubation is a dislodgement of pieces of membrane during introduction. In any individual case we cannot say whether such an accident will occur, yet it is gratifying to know that it does not happen as often as one would naturally suppose. When one is unfortunate enough to have such a case, after the withdrawal of the tube, the child may relieve itself by coughing, or we may aid it by producing emesis, or by extracting the membrane with a pair of long tracheal forceps, as done once by Waxham, of Chicago, or as a *dernier ressort* we must perform tracheotomy.

In avoiding this accident strict attention to the details of the position of the child and of the management of the introducing instrument, along with great care and gentleness on the part of the operator, will be of some assistance.

Let us hope that the future will reveal to some one of us an improvement whereby this unfavorable accident may be overcome.

Finally, can we tell beforehand whether intubation is going to fail?

I think not, and since it has been clearly shown that intubation is able to accomplish the same result as tracheotomy, in the light of my own experience, and of the expressed opinions of many others, I am inclined to resort to tracheotomy only after I have proved that intubation has failed.

ECZEMA RUBRUM OF INFANCY.

By GEORGE T. WELCH, M.D.,

KEYPORT, N. J.

I HAVE under my care at present a middle-aged lady, weighing three hundred and twenty-five pounds, who is suffering with an aggravated type of eczema rubrum, beginning in the right hand, with all the violent frenzy of erysipelas, and rioting onward over, comparatively speaking, as ample a field as Gengis Khan ever came crowding discursively upon from over the Ural. The heat, swelling, and pain of the skin, together with the rapid march of the disease, combined to obscure the diagnosis for a short time. On the fourth day the inflammation began in the left hand, and ultimately the arms, shoulders, neck, and cheeks were involved, the skin being hot, red and shining, tumefied, blebs forming; there was headache, fever, anxious expression of the countenance, with a temperature of 104°. A dermatologist who pronounced the disease, at the first blush, erysipelas, even in the light of subsequent events, would have been treated leniently in any medical court in the world. For at length the skin excoriated, a true catarrh of the surface began, crusts formed, were exfoliated, drying followed, and light irruptions within the devastated district, followed by pityriasis, is the rule at present.

This disease, with the characteristics I have detailed, occurring in an infant about the genitalia would, in all likelihood, have been diagnosed as erysipelas, and treated, or maltreated, accordingly.

It is, in fact, no easy matter to diagnose between erysipelas and eczema rubrum, occurring in the tender, plastic tissues of infancy. Disease, like a potter, moulds and burns them into strange types, puzzling to the Adam who stands forth to name them.

I have notes of eleven cases of eczema rubrum occurring in infants, beginning at the genitals or at the margin of the arms, and with slow, sturdy invasion, accompanied with heat, pain, tumefaction, marasmus, and *diarrhœa*, proceeding to spread upward and downward until, in some cases, two-thirds of the surface was involved. As illustrations, I shall briefly sketch some of these cases.

E. S——, female, aged seven months, when seen, June 24, 1882, had a diseased surface, hard, shining, inflamed, radiating from the vulva, three inches in diameter. The child was fretful, feverish, without appetite, and had indigestion. By July 1st the inflammation had reached a diameter of twelve inches, the skin being puffy about the margins of invasion, while at the centre it was hard. This hardness, due undoubtedly to cellulitis, spread outwardly, accompanying the progress of the acuter symptom. By July 12th the inflammation had spread to the knees and upward to the umbilicus and to the margin of the shoulder-blades. In the meanwhile minute vesicles, closely crowded upon each other, especially about the origin of the disease, threw out a delicate, serous fluid, highly corrosive in character, under the influence of which the epidermis became denuded, and the moist, shining cutis, like an extensive scald, received the discharges from the urinary and alimentary canals, adding further torture to the deplorably failing infant. About one-eighth of the surface became thus exposed, and, complicated with other exhausting symptoms, the child died in about six weeks from the date on which I first saw it.

In September of the same year I was called to see B. E——, male, aged two years, in the last stages of this disease. His previous history was somewhat similar to the previous case, as nearly as I could learn it. In place, however, of a moist, denuded surface about the genitalia and buttocks, the cutis was red and dry, covered with yellowish lamellæ; the penis was covered with dried crusts, under which the disease had continued to eat until the organ was distorted and urination was painful. In spite of his terrible ordeal the little fellow was alert in mind, and complained of but little suffering. His death occurred on the third day afterward.

May 27, 1884, H. D——, male, aged six months; when seen was excoriated about the arms, the skin puffy, red, painful, and the inflammation rapidly progressing. During the next six days it had spread upward and downward as far as the middle of the thighs, half way to the umbilicus, and to the dorsal region of the spine. It did not stop here, but more slowly advanced, cellulitis occurring, with stripping of the epidermis from a large space. Diarrhœa began, and the patient slowly sunk; but under the influence of treatment and better hygienic surroundings recovered in about four weeks.

October 16, 1884, G. T——, aged thirteen months, presented the characteristic symptoms at my first visit. The disease was very obstinate and spread over a large portion of the abdomen, the back, and down the thighs, cellulitis occurred to a limited extent, and there was loss of the epidermis over nearly the whole of the posterior portion of the diseased surface. The base of the penis and of the scrotum was thus denuded. Diarrhœa occurred, and aphthous sore-mouth, but the child finally recovered, being declared convalescent November 27th.

In 1886 I saw two cases of this disease in female infants; in neither of them, however, was it so aggravated as in those previously detailed, though in one there was a circumscribed cellulitis about the vulva and anus, with denudation of the epidermis, the inflammation extending to the waist.

In some of the cases I have observed, the temperature in the axilla reached 104°; in all of them there was fever, diarrhœa, a red, shining, inflamed surface raised above the surrounding healthy skin, with excoriations, often extensive, at the origin of the disease. To diagnose this disease from erysipelas is not always easy; in fact, there seems sometimes to be a compound of the two diseases, or they become convertible. The symptoms of eithe in an adult are likely to be sufficiently defined; but in infancy all is exaggerated, an erythema shades insensibly into an erysipelas, and that subsides as imperceptibly into eczema rubrum. The tender surface seems less a skin than an ethereal mirror, in which the emotions of flesh and blood and nerves picture themselves confusedly. But it may be said that erysipelas spreads more quickly, the swelling is greater, and its subsidence follows usually in from three to five days; in favorable cases some desquamation may occur, but in a majority of cases there is none. Eczema rubrum, though violent in character, with raised and shining cuticle, fever, pricking pain, and cellular hardness, is slower in development, and in about the time that erysipelas would begin to disappear, or prove fatal, it takes on the better-known characteristics of ordinary eczema—the eruption occurs, pustules form, the epidermis is lost about the seat of invasion, while the erythema continues to spread.

Because of the severe constitutional features accompanying this form of eczema in infants—the marasmus and diarrhœa—I look upon it, if much surface is involved, as being of a grave character, and if extensive denudation has occurred, involving the genitals, it may prove fatal.

As to treatment, the cases I have seen have occurred in the underfed and neglected infants of poor and sordid families, and a radical change must be made in the hygienic surroundings. Sour and filthy clothing must be removed, diapers must not be pinned about the child, but the discharges must be received upon napkins laid under the patient, which must be at once changed, and the parts must be gently bathed and dried afterward. Infants with this disease protest vigorously against the contact of water, and it does prove an irritant. Bran-infusion, or water to which glycerine and extract of witch-hazel have been added, or oatmeal-water, is best for bathing purposes, and, after drying, a powder of starch and oxide of zinc may be dusted over the surface. To the denuded part an ointment of glycerole of boracic acid is peculiarly grateful and healing. Spread upon prepared lint and laid over the part is the best way of employing it. Elsewhere lotions containing calamine and oxide of zinc in rose-water or lime-water prove most serviceable. Later on, ointments of oxide of zinc, and finally of mercurial preparations, are more useful.

Internally, emulsions of cod-liver oil, if they do not impair the already weak digestion, are called for, but especially mixtures containing pepsin, dilute hydrochloric acid, and bismuth, with a small amount of opium in some form, suspended in syrup and water, to check the indigestion and diarrhœa. This must be speedily controlled or all is lost. If the mother's milk is unfit for nourishment, condensed milk, with lime-water, barley-water, and a few drops of whiskey, must be substituted. Mellin's food, or Horlick's, or Carnrick's soluble food, or some other approved preparation, will find its place. Beef-peptonoids or Murdoch's liquid food will be called for. The practitioner will be puzzled time and again, but a level head and an extended knowledge of the therapeutics of intestinal indigestion and of eczema will bear him out.

It is no part of my plan to sketch an extended treatment of the disease; rather, I have sought to call a stricter attention to a rare form of eczema in infants, and warn against confounding it with erysipelas, as I have known it to be done, and the consequent mischief resulting from misapplied drugs.

OVARIOTOMY.—M. Terrillon communicated to the Surgical Society a *résumé* of 35 ovariotomies completed in 1884. Of these 20 were difficult cases; 29 unilocular cysts, 4 parovarian cysts, 1 dermoid cyst, and 1 ovarian sarcoma. Of the 35 patients 6 died. The operations were conducted antiseptically.—*Medical Press.*

Clinical Department.

BERGEON'S TREATMENT FOR PHTHISIS.

Dr. J. R. Brandt, of Chicago, writes: "I have been using the 'Bergeon treatment' for diseases of the respiratory tract since December last, in private practice, also to some extent in Cook County Hospital. I do not feel inclined to make a full report of my cases as yet, but there are several interesting points that have been developed which I think should be made known without further delay: 1. In cases of phthisis caused by inhalation of vegetable or mineral irritants, *i.e.*, workers in wood or stone, the treatment has only given a short relief, and the patients relapsed. 2. In cases of amyloid kidney there was more sudden relapse than in the first cases. 3. In cases where large cavities existed there was no improvement from the beginning. 4. In cases complicated with paraplegia, the treatment was actually injurious, causing violent cephalalgia. 5. In cases of tuberculosis, complicated with tubercular meningitis, treatment has proved a failure. 6. In asthma there was no improvement after the fourth or fifth day.

As to the nationalities of those who showed the most immediate relief, the Norwegians came first, Swedes, Danes, and Germans in the order named, English and Americans of any other descent except Irish, came next. The Irish and their immediate descent came next to last, and last and least helped were the mulatto, and half-breed Indian. Caution: All persons should be carefully examined in order to exclude the cases as above mentioned, as well as those who may have aneurismal varix. In generating the carbon dioxide care should be taken to exclude persons from the room who are subject to asthmatic attacks, as I have seen a violent seizure provoked in a person who was subject to very slight attacks by unfortunately inhaling some of the gas while it was being generated. The following queries have also been suggested to me: 1. Can any, and, if so, what forms of bacteria be cultivated in sulphurous waters, either before or after passing carbon dioxide through them? 2. If the numerous cases reported by Professor Bergeon gave entire satisfaction to the Medical Faculty of Paris, why should M. Cornil institute a series of experiments on dogs, when it had been successful in the highest type of animal life? 3. What is it that really helps the patient? When we reflect that the waters used by Professor Bergeon contain only 0.16 of a cubic inch of H_2S. to the pint, and the waters used by others contain from one to four cubic inches to the pint, and yet all claim wonderful results, may it not be that some of the salts held in solution do much toward the relief? In England, between the years of 1830–32, Professor Lata and Dr. Stevens injected into the veins of cholera patients solutions of the muriate and carbonate of sodium from thirty-one to forty pounds within twenty-four hours, with the most interesting results (see Pereira's 'Materia Medica,' p. 313)—restoration of pulse and of consciousness, and feeling of well being, etc.; yet they all died just the same, and of cholera."

TWO CASES OF FRACTURE OF THE SKULL—RECOVERY.

Dr. Thomas H. Manley, attending surgeon to the Harlem Hospital, reports the following cases: "John S——, nineteen years of age, suffering from the results of a kick by a horse, was brought to the Harlem Hospital on March 29th. Examination showed a large chasm on the left lateral aspect of the skull. The smashed bone was crowded down into the brain substance, and some of the fissures of the shattered bone were filled with hair, and others with fragments of the dura mater and cortical substance of the brain. There was not much hemorrhage. As nearly as could be defined, the fracture extended through the parietal bone posterior to the coronal suture, involving the anterior junction of the temporal with the parietal, just above the temporal ridge. The wound was about two and a half inches in length by one and a half in width. When the patient was received he was unconscious and suffering from evidences of concussion. The pulse was slow and hard, the body was covered with a cold, clammy perspiration, and the pupils were widely dilated. The smaller fragments of bone were first lifted out, and then the larger pieces raised up by the bone elevator. The protruding brain substance that could not be replaced was removed by the scissors. The edges of the dura mater were then carefully approximated and secured by catgut sutures after the wound had been thoroughly washed with antiseptic solutions. A horse-hair drain was inserted beneath the scalp, and the scalp itself was closed with strong catgut sutures. The following day the patient was found to be very childish, crying on the slightest provocation, and was also aphasic. He was able to articulate clearly, but could not speak connectedly, using the wrong words constantly. He recognized his father, and seemed to take an interest in what was going on around him. There was considerable discharge in the dressing, but no pus. Temperature normal, pulse about 90. Paralysis of the right arm supervened, but gradually disappeared along with the aphasia. The wound healed readily without complications, and the patient made a good recovery. There was a slight degree of hernia cerebri, which gradually receded.

"The second case was that of a man, twenty-eight years of age, who had received a fracture of the cranium from a blow with a bar of iron. It was a depressed fracture situated just over the temporal ridge, three and one-fourth inches in length and three-fourths of an inch in width, commencing on the frontal bone and extending to the parietal. On admission the man was unconscious, breathing stertorously, the face was of a deep-red color, the eyelids were drooping, and there was a divergent squint. An attempt was made to raise the bone without trephining, but was unsuccessful. Then the trephine was applied and a small button of bone was removed. The teeth of the instrument pierced the cortical substance of the brain, lacerated the dura mater, and caused some hemorrhage. It was now found that the fracture, though extensive on the surface, involved the external table only of the skull, and no break in the inner table could be discovered. The line of incision was closed with continuous catgut suture, provision being made for free drainage. On coming from under the influence of the anæsthetic, the patient was found to be conscious. He vomited some dark blood-clots during the night, and was unable to retain anything on his stomach all the next day. He was rational and slept the greater part of the time. On the third day the man had three convulsions of an epileptic character; he was aphasic and had some squinting. The convulsions recurred again on the following day, but not after that. The wound healed readily, the temperature rising only once above 100°.

"Both these cases were brought into the hospital at about the same time, and both, though sustaining wounds of an altogether different character, were affected similarly as regarded the loss of speech. The first man, although much the more seriously injured, did not lose consciousness until after he had been brought to the hospital. At about the fifth day in each case there was a noticeable improvement in the power of language. The temporary paralysis in the first case was of short duration, and was confined to the upper extremity. The second patient had all the symptoms of a serious lesion, although no such lesion was present. The presumption was that there was bone pressing into the brain substance, and probably hemorrhage, but the sequel proved that there was neither. In this case it was impossible to

say whether the cerebral symptoms observed were due to the injury or to the operation. The writer states that he is inclined to the opinion that they were due rather to the latter."

TWO ADDITIONAL CASES OF SPONTANEOUS DELIVERY IN PLACENTA PRÆVIA.

Dr. Alfred Hinde, of Chicago, Ill., writes: "After reading the interesting reports of cases of placenta prævia in recent issues of The Medical Record, I venture to forward you the notes of a case which occurred recently in my own practice, and which terminated spontaneously. On April 19th last I was called to see Mrs. F. H——, forty-two years of age, a robust Englishwoman, in her eleventh gestation, and then in the eighth month of the same, and was told that 'the waters had broke' forty-eight hours before, and that a slight sanious tinge was now present in the continuous leakage. I made a digital examination and found the characteristic multiparous cervix, but the internal os was not perceptibly open. The fœtal heart-sounds were very distinctly heard above and to the left of the umbilicus. The condition of the patient was good, and there was no uterine pain present. I suspected placenta prævia and elicited the information that in a former pregnancy she had flowed for about a week previous to labor. On April 21st, two days later, a distinct hemorrhage commenced, and this continued in slight but variable amount until the noon of the 24th, when it became suddenly severe and intermittently continued for six hours. I saw the patient at this time, and she complained of faintness, with slight thirst, and was sighing and retching frequently; pulse 98. The bed was saturated with blood; the vagina was filled with clots, and the os uteri was about the size of a silver dollar—soft, cool, moist, and dilatable, and with the boggy placenta presenting. Fearing the recurrence of severe hemorrhages, and having witnessed death from such cause in a similar case, where the post-mortem plainly revealed that, had a timely termination of the gestation been pursued, a most probable favorable result to the mother would have been attained, I thought seriously of at once dilating the os, separating in part or *in toto* the placenta, and withdrawing the same if advisable, and, lastly, turning and delivering the viable child—using ergot to excite and maintain uterine contractions. Counsel stated that my proposed course of procedure, though possibly the correct one, and probably offering the best chance for the mother and viable child, yet was unorthodox; and seeing that uterine action was slight, the hemorrhage at this time of small amount, a waiting course was advised. I deferred to this opinion, and, after the administration of an opiate and counselling quiet, left the case. About thirty hours later I was hurriedly summoned by the husband, who told me that severe pains had commenced, and that the flow, though continuous since my last visit, had only been slight in amount. On reaching the bedside I found the child born and the uterus well contracted, and, consequently, no hemorrhage other than normal was present. The nurse said the child had been born about fifteen minutes; that severe pains had started in about an hour previous to the birth, and that with the third pain the child was born. I waited a quarter of an hour, and then readily expressed and delivered the placenta, and thus completed the labor. The placenta on careful examination was found to be entire and healthy, and showed one-half its bulk to be ecchymosed, shrunken, and the uterine surface of this half was covered with blood-clots. Thus, to the very gradual dilatation of the os uteri, together with the slow separation of the cervical placenta and the thorough plugging of the venous sinuses, together with a precipitate labor, we may attribute the happy termination of this case. The further progress of the case was strictly normal. Here we have the notes of two placentæ prævіæ occurring in the same individual, and both terminating favorably to the mother without professional interference."

Dr. B. P. Reese, of Staunton, Va., reports a second case of this nature, which occurred in his practice at about the time that the account of the first case appeared in these columns. The patient, thirty-four years of age, had been married four years, and had had one miscarriage. She had had frequent slight hemorrhages for some time. The vagina was very long, and it was nearly impossible to reach the os uteri with the examining finger, but a diagnosis of placenta prævia was made from the obstinate bleeding. Dr. Patterson saw the case in consultation and confirmed the diagnosis. Tampons wet with Monsell's solution were introduced daily. About a week after the case was first seen slight pains began and the hemorrhage increased. Sometimes a severe pain would force out the tampon, and the bleeding would then increase. After the os was dilated to the size of a half-dollar, the placenta could be plainly felt covering about one-half the opening. The placenta came away without trouble after the birth of the child. During the three weeks following, the patient did very well; but one evening at the end of this time, after she had been sitting up in bed until she was tired, her husband took her in his arms and put her in a chair. She at once fainted, and it was long before she was restored to consciousness. She seemed never to rally wholly, but died the following day.

THE TREATMENT OF INTERNAL HÆMORRHOIDS BY INJECTION.

Dr. Q. A. Shuford, of Tyler, Tex., sends the following communication: "In the treatment of internal hæmorrhoids by submucous injection, it is necessary, in the first place, to have an instrument that can be introduced with the least amount of pain, and so constructed as to expose as much of the mucous membrane as possible. When a tumor is discovered, the speculum should be manipulated so as to bring the centre of the tumor into plain view, and the needle should puncture the pile at this spot, as it is here less sensitive than elsewhere. This requires a long needle, which should have a guard near the point, so as to prevent it from entering too deeply. For small tumors I inject from three to five drops, and for larger ones from five to eight drops of the following mixture: Rub well together one drachm of salicylic acid and one and one-half drachm of glycerine, and add two drachms of carbolic acid; then rub together one drachm of borax and one and one-half drachm of glycerine, and mix the two thoroughly, allowing the mixture to stand until clear. The chemical changes and *modus operandi* of this combination I do not know; but I do know that internal hæmorrhoids treated in this way become atrophied, shrink up, and peel off without pain, inflammation, or suppuration. I have never had any trouble nor heard any complaints from patients so treated. The two essential points in the treatment of internal hæmorrhoids are: first, an instrument that will bring the parts to be treated into view, and that without pain; and, second, a remedy that will completely destroy the pile, while leaving the mucous membrane in a healthy condition. An interval of from eight to ten days should be allowed to elapse between the injections, so as to give the mucous membrane time to become toughened. The injections cause almost no pain, and do not prevent the patient from pursuing his ordinary avocations." Dr. Shuford reports several cases treated after this method, and adds that he has treated nearly one hundred, of varying degrees of severity, and in none has he seen any inflammation or suppuration following the injections.

To Preserve Bichloride Solutions from precipitation, add seven and a half grains citric acid to each quart of the solution.

Progress of Medical Science.

HYDRASTIS CANADENSIS IN UTERINE HEMORRHAGE.—Hydrastis Canadensis, or Golden Seal, has been long used in this country as a pure bitter in atonic dyspepsia. The root of hydrastis contains berberin and hydrastin, both of which are believed to have a vaso-constrictive action on relaxed mucous membranes, thus ameliorating congestive states (*Boston Medical and Surgical Journal*). Professor Schatz, of Rostock, Germany, was the first to bring hydrastis prominently before the medical public as a uterine tonic. He contrasts it with ergot, which it resembles in its action, but he finds it efficient in cases of uterine hemorrage where ergot is powerless. In menor rhagia from whatever cause, in hemorrhages due to metritis and endometritis, to myoma, to incomplete involution of the puerperal uterus, he has found hydrastis invaluable. Professor Schatz's mode of administration is to give the fluid extract in twenty-drop doses four times a day, and not only when the hemorrhage continues, but also from one to two weeks prior to the time that the menstrual period sets in, especially in the congestive form. Since the publication of the paper of Professor Schatz, Professor Slaviansky, of St. Petersburg, has made some interesting experiments with hydrastin, from which he has found that this alkaloid has an ecbolic effect on pregnant animals (bitches and rabbits), and when given to parturient women it expedites labor. He puts the maximum dose of hydrastin at one-half grain. The latest contribution to the subject of the uses of hydrastis in uterine hemorrhage is by Dr. R. W. Wilcox, in the New York *Medical Journal*. His conclusions are based on the observation of the effects of this in fifty cases. In three of uterine fibro-myomata, in which he gave hydrastis for metrorrhagia, the flow was speedily checked. Persistent use of hydrastis (for months) was followed by considerable reduction in the depth of the uterine cavity and in the volume of the uterus. Wilcox concludes that hydrastis arrests the bleeding from fibro-myomata by the production of anæmia of the uterine tissues, and he refers to the physiological experiments of Mays, which showed "that hydrastin in small doses increased blood-pressure, while causing vaso-motor contraction, cardiac inhibition, and anæmia of the alimentary mucous membrane. Mays observed also uterine contraction, even of the body and horns of the uterus." Fellner, moreover, in some experiments made in 1885 with fluid extract of hydrastis, noticed uterine contractions and anæmia of that organ. In seven cases of hemorrhagic endometritis, five being cases of endometritis fungosa, marked benefit was noted under the use of hydrastis. Dr. Wilcox remarks that "in endometritis fungosa, we have in hydrastis a sovereign remedy, even when curetting has failed to arrest the bleeding." Sixteen cases of subinvolution of the uterus were treated satisfactorily with hydrastis. Five cases of climacteric hemorrhage were also benefited by the same drug, and the same is said of nine cases of pelvic inflammation and three of congenital anteflexion. He gives the fluid extract of hydrastis in twenty-drop doses three or four times daily in a wineglassful of water.

PHOSPHATIC DIABETES.—At a recent meeting of the Medical Society of London, Dr. Ralfe read a paper on this subject. He arranged his cases in groups according to the classification of Professor Teissier, who first gave a systematic account of the affection. Group 1. Excessive elimination of phosphoric acid associated with nervous derangements; three cases. Group 2. Excessive elimination of phosphoric acid associated with phthisis; three cases. Group 3. Excessive elimination of phosphoric acid alternating with saccharine diabetes; three cases. Group 4. Excessive elimination of phosphoric acid running a distinct course, like saccharine diabetes, only without the sugar; five cases. All the cases, with the exception of two, were young adult males. The symptoms common to all were great emaciation, aching rheumatic pains in loins and pelvic regions, dry, harsh skin, with tendency to boils, and ravenous appetite; in some cases cataract develops. In the majority there was polyuria; in others the urine was normal in quantity, with a high specific gravity. The urea was increased in some cases slightly, in others to a greater extent; but the great feature of all the cases was the very considerable and constant elimination of phosphoric acid, with or without increase of the other constituents of the urine—a feature which distinguishes it from insipid diabetes on the one hand, and azoturia on the other, with both of which it has been improperly confounded. The pathology, Dr. Ralfe thinks, depends not so much on increased metabolism of nervous matter as on defective nutrition, so that the tissues are not able to utilize the phosphorus brought to them, and consequently a greater amount passes through the system daily. In those cases in which an excessive excretion of phosphoric acid replaces saccharine diabetes, it is probable that acids like oxy-butyric-glycollic, etc., formed by imperfect oxidation of the sugar, dissolve out the earthy phosphates from the tissues, which appear in excess in the urine. As regards the prognosis in these cases, it is most unfavorable in the first two groups; country air, massage, cod-liver oil, may for a time do good, but the patients rapidly fall back, and either are carried off by some acute attack proving fatal in their exhausted condition, or drift on to phthisis, or into diabetes mellitus. The prognosis of the last two groups is much more favorable.—*The Lancet.*

COMPARATIVE VIRULENCE OF TUBERCULOSIS AND SCROFULA.—At a recent meeting of the Académie des Sciences, M. Arloing made some remarks on the virulence of tuberculosis and scrofula. He had already shown that pulmonary tuberculosis infected guinea-pigs and rabbits, while true glandular scrofula had no effect on the latter animal. M. Arloing now inquired whether the virulence of scrofula might not be increased to such a degree as to permit the infection of both these animals. Experiment proved that the passage of scrofula through two generations of guinea-pigs did not increase its virulence in respect to the rabbit, and did not perceptibly modify its action upon the guinea-pig itself. The organism of the guinea-pig, on the other hand, augmented the virulence of the weakened tuberculous virus. This fact shows that there is a decided difference in the two diseases, although it has not yet been proved that they are caused by two distinct kinds of virus.—*British Medical Journal.*

ORCHITIS IN A NEW-BORN CHILD.—Dr. Reid writes as follows in the *Australasian Medical Gazette*: "The child was brought to me on November 20, 1886. The mother said it always had a cold (snuffles), and that the woman in attendance at the birth noticed the left scrotum large, but said it was nothing. There were ulceration at the navel, slight bronchitis and thrush, with snuffles to a small extent. The scrotum on the affected side was congested at parts, boggy in feel, and very slightly, if at all, tender, as if containing fluid, opaque, and the testicle was enlarged uniformly to about once and a half the natural size. Under mercurial inunction testicle and scrotum reached their natural size on the 25th. On the 26th, change of weather metamorphosed the bronchitis, which they refused to have treated, into broncho-pneumonia (catarrhal pneumonia), and the child, at the age of fifty-five days, died at midnight from exhaustion. There was no autopsy. The parents have been healthy, and the brothers and sisters, although pasty in appearance, have never exhibited signs of syphilis. The teeth are slightly notched in some of the children. A brother survived a severe attack of typhoid complicated with pneumonia, but uninfluenced by mercurials. Mother's brother (uncle) was treated for over a year for psoriasis of the leg, which

yielded to anti-syphilitic treatment with chrysophanic acid locally applied. He denied ever having had connection, and his age is twenty-three. Thus, if the disease is syphilitic, which I believe it to be, from the uniformly enlarged, hard testicle and the presence of snuffles, it must be the product of latent syphilis, just as that of its uncle was. From the life of the uncle, J. A. F——, I have reason to believe his statement, and also his assertion when he said he never suffered since childhood. There was no known cause of injury; the labor was natural."

URINARY INFILTRATION.—Dr. Picard states that the prognosis of any given case of urinary infiltration is to be based upon the quantity and quality of the infiltrated urine, the extent of the infiltration, and the general condition of the patient (*St. Louis Medical and Surgical Journal*, April, 1887). The larger the amount of urine, the worse the condition; the more dense it is, the greater will be the irritation it causes; although less than if ammoniacal, as it will then prove septic. If the involvement be rapid, it shows that the urine came in a forcible stream, and this implies a laceration of tissues. The treatment of urinary infiltration consists of evacuating the urine and re-establishing the normal canal. To accomplish the first purpose, the writer recommends an incision in the median line of the perineum, encroaching somewhat upon the scrotum and continued up to within a half inch of the anus. The tissues to be incised are: the integument, the subcutaneous connective tissue, and the superficial fascia. Secondary incisions are also to be made, not deeper than the cellular tissue. Portions of necrosed tissue will accompany the escape of the fetid urine, mixed with sanious pus. Antiseptic dressings are to be applied. In about two weeks or a month the question of re-establishing the normal canal may be considered. Efforts should not be made before this, because the disturbances caused by the urine have not disappeared, and any attempts on the urethra might be attended by a chill, fever, and even septicæmia or purulent infection. As to the method of restoring the urethra to its normal calibre, the surgeon must decide for himself. Progressive dilatation or internal urethrotomy will give good results, if used firmly and judiciously. Cases that appeared to be hopeless at first will become entirely well if the urinary infiltration is properly managed before any surgical interference is brought to bear on the urethra.

THE NATURE OF COMA.—Dr. Mercier has recently published an interesting paper on this much-discussed topic. *The Lancet* of March 5, 1887, comments as follows upon it: "Dr. Mercier accepts, with one slight modification, Mr. Savory's definition of coma, as a 'state of insensibility from which the patient cannot be completely aroused, together with a tendency to death, chiefly by asphyxia,' the modification being the substitution of the phrase 'evidence of defect of consciousness' for the term 'insensibility,' as being more correctly descriptive of a state in which it is impossible to determine whether or not consciousness is absolutely lost. He points out that the failure of respiratory power is due to the same condition of powerlessness and loss of muscular tone that pervade the whole organism in the comatose state. The skin is relaxed and flaccid, the pulse is full and soft, the bladder contracts sluggishly, the pupils may have lost all power of contraction, and all the limbs are paralyzed, the muscles being quite flaccid. The comatose patient is not inert because he is unconscious, but because he is actually paralyzed. The cardiac muscle alone does not share in this universal paresis. From this condition of complete coma to that pre-comatose period marked by the slightest mental confusion and bodily weakness there are all gradations, as may be seen, for example, in alcoholic poisoning. The phenomena of drunkenness in all its stages exhibit an unbroken chain of gradually deepening lesion of the higher cerebral functions, which enable us to trace the relations of the condition we call coma to the slight perturbations and deviations from the normal condition that mark the earliest changes due to the action of the poison on the brain. As Dr. Hughlings Jackson has pointed out, the paralysis is first that of a loss of movements rather than of motion; the more elaborate actions go before the coarser; the breathing fails before the heart, and the accessory parts of the breathing apparatus fail before the fundamental. It consists in 'a long process of degradation, the last point of attack being the heart, and the penultimate the breathing.' Incidentally Dr. Mercier indicates a pathognomonic sign of true coma, which depends on this loss of muscular control, and that is the movement of the eyes independently of one another. As with the bodily so with the mental functions. The progress of coma is marked in the one as in the other by a gradually increasing enfeeblement. At first there is difficulty in performing delicate mental operations, and then inability for any coherent thought, and, lastly, evidence of loss of consciousness; no response to impressions from without, no evidence of response to impressions from within. And this coincides with the relaxation of muscular tone, the ataxia passing into paralysis; so that the power to execute voluntary movement fails *pari passu* with the failing intelligence, and suggests overwhelmingly the inference that both mental and bodily defect are due to the same lesion. And, it is pointed out, the whole organism is affected—evidence, again, that in the highest centres of the brain we have to do not with any specialized and circumscribed areas of 'localization,' but with a region where the various parts of the body are all represented in some degree, the region of consciousness and of the organism as a whole. Dr. Mercier implies that in the modern doctrine of 'nerve-centres' we run a risk of losing sight of this fact or principle, that the whole organism is represented, and therefore to a certain extent controlled and knit together through the highest nerve-centres—a principle which is so clearly manifested in the phenomena of coma, and just as clearly in the phenomena of insanity. For insanity is linked with defects in the nutrition of the body; it runs its course, both as regards mental faculties and bodily functions, in the same direction and with the same pathological sequence as does coma, in which it often finally terminates. But if coma be a form of insanity it is a 'fulminant' form; and if insanity be expressed in the terms of coma it would be that it is coma long drawn out. The underlying principle in Dr. Mercier's argument is that the higher brain centres, where consciousness is aroused by impressions from within and without, and where the will is born of intelligence, and action expresses the response of the conscious will to the environment—that there, where all the bodily functions must be represented, is the seat of the lesion that suddenly or gradually breaks the chain between the individual organism and its surroundings, and may profoundly affect those functions which, under the control of the nervous system, are essential to the life of the organism. Possibly this region is conterminous only with the whole of the cerebral cortex; but this does not detract from the suggestiveness or truth of the proposition that 'whether in origin, or in cause, or in termination, coma and insanity are pathologically and symptomatically identical, and the only important difference between them is the difference in duration.' They each illustrate the law of dissolution."

DYING AT THE EBB OF THE TIDE.—The *Medical Press* says that a physician living on the seaboard thus writes to a paper: "Within the last five years, in a district embracing sixty square miles or so by the sea, I have noted the hour and the minute of no less than ninety-three demises in my own immediate practice, and every soul of them has all gone out with the tide, save four who died suddenly by fatal accident."

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GEORGE F. SHRADY, A.M., M.D., EDITOR.

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THE NAVAL MEDICAL SERVICE.

FROM time to time attention has been drawn in some of the medical journals to the undesirableness of the naval medical service as a career for physicians.

Although many of the articles upon this subject have been somewhat highly colored, it is only too true that the compensation offered by the Government is disproportionate to the requirements of the service, which are so great (and necessarily so, if the medical officers of the navy are to be more than mere place-holders) that it has been impossible for some years to supply the natural waste of the corps from the material presenting itself for examination.

It cannot be surprising that young men of good attainments, who have shown themselves to be worthy members of a serious profession, should object to entering a service in which their merits receive such scant recognition. The "relative rank" given them is the lowest possible, and they are forced to live in a "steerage," the discomforts and complete unfitness of which, for a man intrusted with important duties, are difficult, for one who has not had the experience, to realize.

The steerage stage is over in three years, and then, if they successfully pass their examinations for promotion, comes a period of weary waiting for dead men's shoes before the grade of surgeon is reached; at the present rate of promotion this finds the "passed assistant" about forty years old, having lived during this time on the small pay allowed that grade, practically less than that of an acting volunteer assistant surgeon in the army. It can hardly be supposed that Congress intended that this should be, since promotion was very much more rapid when the present pay-table was made than it is now.

The position of the younger medical officers waiting for their promotion is not made more pleasant by the contrast between themselves and their army *confrères* who have a satisfactory status in the service, and receive a compensation that naval surgeons would be glad to exchange for their own.

The army medical officers have undoubtedly managed things better than their brothers afloat, but the latter can hardly be accused of apathy or lack of effort to improve their condition.

The obstacles that naval surgeons have had to contend with and against which their struggles have so far been futile, are, in the first place, the smallness of the corps, which at the present writing contains only one hundred and seventy-three members, and their enforced isolation from the mass of the profession, with whom, from the nature of their duties, they can rarely come into intimate contact. Consequently their colleagues on shore almost lose sight of them, and allow them to work out their own salvation.

Another reason why they have fared so much worse than those of the army, is that the traditions of the navy —which was originally modelled upon the English navy system, when the aristocratic idea that it was beneath the dignity of gentlemen to engage in the practice of medicine prevailed—are all strongly inimical to staff officers, and have prevented them from obtaining substantive rank. This means much more than the mere satisfaction of the desire for sounding military titles, as anyone at all familiar with the working of a military organization will readily understand. In this respect our navy has fallen behind, not only our own army, but even its original model, the English navy, in which the position and pay of medical officers are relatively much better than in our own.

The terms "combatant" and "non-combatant" officers, which are persistently employed by the line, with the view of making a sharp distinction between themselves and the staff, and thus preventing the acquisition of substantive rank by medical officers, are illogical and misleading ones. Either every man who performs services essential to the efficiency of a fighting organization, and exposes his life in action, is a combatant in the broad sense of the word; or, if the term is to be limited to those who actually do the killing, the men who pull the triggers and lock-strings are the only combatants. Indeed, the fighting strength of a force is often estimated by the number of "muskets" in line of battle, none of the officers being reckoned at all.

The records of the war show that the loss of life in action was proportionately much greater in the medical corps of the navy than in the line or any other staff corps.

Surgeons in the navy are subjected to exactly the same regulations and discipline as those that govern the line, rule their departments by military law and methods, incur the same perils in war, greater ones in peace, and are yet deprived of many privileges and subject to many galling distinctions because they do not have the substantive rank that army surgeons enjoy.

The medical officer who is killed in battle in the discharge of his duty is docked of part of the military funeral honors that are paid to his comrade of the line, and this childish and ungenerous distinction is kept up for no better reason apparently than that it wounds, or is supposed to wound, the *amour propre* of the staff.

If Congress would grant to naval medical officers that which they have already given to those of the army, such distinctions, many of them more substantial and harassing than the one above mentioned, would fall to the ground, and the struggle between the factions would cease, as the experience of the army has shown.

To those who read the bitter complaints of the English army medical officers, which are now appearing in their medical journals, *à propos* of the recent abolition of even their shadowy "relative rank," it should be ap-

parent that actual rank is almost a necessity of military life, and that all officers who are of a military organization without it feel constantly and keenly the need of the well-defined status that only such rank can give.

The surgeons who go into action with the first line of infantry, or gallop with their regiments wherever they go, if serving with cavalry, as their instructions require them to do, know that they should have this rank, or else, if they are "civilians," as some of the line contend, not be compelled to put their lives in jeopardy, or be subject to military law and discipline.

It is more than probable that the English army medical staff will finally gain its point, for behind it is the active interest of the medical profession and their most influential societies and journals, which must in the end, make itself felt in Parliament. With anything like such support from the profession at large in this country, the rightful claims of the medical officers of the navy could hardly fail to be granted, and these claims are simply that they shall be placed on the same footing and receive the same compensation as those of the army.

That members in good standing of a liberal profession should be in a position so unsatisfactory, in one of the principal services of the Government, is a reflection upon that profession that should, if the facts are ever generally known, excite interest enough in its members at large to induce them to use their great influence with Congress to improve this condition. Meanwhile naval surgeons must possess their souls in patience, for without the aid of their professional *confrères* outside of the service, their struggle upward must be a hard; and, for a long time, almost a hopeless one.

OUR NATIONAL HOLIDAY: A TIMELY SUGGESTION.

As that day approaches on which the irrepressible American small boy gives free vent to his enthusiasm, while at the same time his toy-pistol lodges sundry foreign bodies in various parts of the anatomy of self and friends, a word on the appropriate treatment of those small, but by no means unimportant, injuries which attend the Fourth of July may not be out of place.

The frequency of these injuries is within the knowledge of every practitioner in city or country—so, also, the fact that in a certain proportion of cases septic processes—cellulitis, septicæmia, pyæmia, or tetanus—complicate the wound.

The first is by no means rare, while the mortalities presented by the daily press during the month of July headed, "The Deadly Toy-pistol," show that the latter are far too common.

These wounds are small, but their treatment is a matter of importance, and should be carried out as follows:

As soon as possible after the receipt of the injury the parts about the wound should be thoroughly cleansed with an antiseptic solution of sufficient strength, preferably the bichloride of mercury, one part in one thousand. A free incision should then be made at the site of the wound to its bottom, all foreign bodies removed if possible, the bottom and sides of the wound thoroughly *scrubbed* out with the bichloride solution and loosely packed with gauze wrung out in the same. The dressing should be changed often, say, twice a day at first, and the wound will quickly close. The injection of a few drops of the four per cent. solution of cocaine will allay pain and permit thorough procedure.

Under the "expectant" plan of treatment cellulitis will generally reward expectation; if the antiseptic measures described above be sufficiently radical it cannot develop, but, as in all antiseptic surgery, success depends on the degree of thoroughness with which the details are carried out.

News of the Week.

NINTH INTERNATIONAL MEDICAL CONGRESS.—The Executive Committee of the Ninth International Medical Congress held a full and harmonious meeting in the Palmer House, Chicago, on the 6th and 7th inst. Full reports were made by sub-committees and the chief officers of the Sections, which showed a most satisfactory degree of progress in all the necessary arrangements for a large and successful Congress. The several Sections are well organized, and for the most part with arrangements for an abundance of scientific and practical work of importance, furnished in fair proportion by parties of reputation in other countries. The local arrangements at Washington are also rapidly maturing, and include not only the best possible accommodations for the regular work, but a series of appropriate entertainments and probably an excursion for the foreign guests to Niagara Falls and return to New York, after the close of the Congress. An outline of the whole programme will soon be given to the public.—*Jour. of Am. Med. Assn.*

DR. SENECA D. POWELL has been elected Professor of Clinical Surgery in the New York Post-graduate Medical School and Hospital.

THE RETREAT FOR THE INSANE at Hartford, Conn., in publishing its annual report classifies its patients according to the etiology of the disease. Such a method gives a much better idea of the kind of cases than the older symptomological classification commonly used.

BRAIN TUMOR AND ALCOHOLIC COMA.—Three young internes of the Newark City Hospital have received a very severe lesson. A patient was brought to the hospital comatose. He was thought to be suffering from alcoholism, and he was treated accordingly, being given a douche and strong cutaneous irritation. The patient died, and on autopsy there was found a tumor of the brain. A coroner's jury investigated the case, and the internes were thereupon arrested for manslaughter.

THE VIRGINIA STATE MEDICAL SOCIETY is to meet at Richmond on October 19, 1887.

HARVARD MEDICAL COLLEGE.—Dr. C. B. Porter has been appointed Professor of Clinical Surgery, and Dr. J. C. Warren, Associate Professor.

THE USE OF OPIUM IN COUNTRY TOWNS.—Dr. Henry Boynton, of Woodstock, Vt., in a recent address on alcohol and opium, said that the use of opium was increasing in that locality. The four druggists report sales of opium in a year sufficient to make one hundred gallons of laudanum. This is the equivalent of one hundred and sixty-seven ounces of morphine. Of this whole amount only *five per cent.* is sold to physicians.

JUBILEES AND MEDICAL JOURNALS.—The *Hospital Gazette and Students' Journal* is, we believe, the only successful students' medical journal in existence. The June 4th issue comes to us with a jubilee supplement.

DO NOT SPEAK LIGHTLY OF A PHYSICIAN.—A suit was recently tried in Brooklyn, which shows that it is not always safe to speak lightly of a physician. Dr. W. J. Cruikshank recovered a $1,600 verdict, in his suit for $50,000 damages, against William Gordon, the trial of which was brought in the Supreme Court. The doctor asserted that Mr. Gordon went to the mother of a child he was attending, and urged her to secure another physician without delay, as, in his opinion, Dr. Cruikshank had not the skill necessary to attend a sick dog.

PROFESSOR BILLROTH'S RECOVERY from an alarming illness has been the subject of wide congratulation. "Billroth's popularity," says the *British Medical Journal*, "is due, of course, in the first place, to the combination of exquisite operative skill with scientific culture of the best and widest kind, which makes him almost a unique figure in contemporary surgery. His professional gifts and acquirements are, however, largely aided by social graces of a sort not usually associated, in this country at any rate, with eminent surgeons. Billroth is a piano-player of repute, and is, or perhaps we should say has been, almost as agile a performer with his feet in the ball-room as he is with his hands in the operating-theatre. He is, in fact, quite one of the social stars of the imperial city, a position which he owes quite as much to the charm of his manners as to his celebrity. His purse is always open to private as well as public charity. The enthusiastic devotion of his pupils is founded not altogether on his success as a teacher, but also on many acts of individual kindness, all the more appreciated that they are known only to the recipients."

THE ABUSE OF MEDICAL CHARITY.—We are requested by the Executive Committee of the German Dispensary to publish the following: "June 9th we sent to the office of the Charity Organization Society the name of a patient, for investigation, who had presented herself and child at the skin department for gratuitous treatment, stating that she was unable to pay a doctor. Two days later we received the following report: 'Man very indignant at wife for taking child to dispensary. Told visitor it was done in his absence; has a large business and is abundantly able to pay.'"

DRUGGISTS, DENTISTS, AND DOCTORS.—Massachusetts compels the registration of pharmacists, and recently the legislature passed a law providing for the registration of dentists, but the doctors are left alone.

MALARIA AND TOBACCO.—A Western medical writer has discovered a new and dangerous source of malaria to be the cigar made of tobacco grown in malarial regions. He thinks the recent invasion of the New England States by malaria due to the increased use of Southern-grown tobacco and Southern-packed cigars.—*American Practitioner.*

THE LATEST RESULTS OF YELLOW FEVER INOCULATIONS communicated by MM. D. Freire, Paul Gibier, and Ribourgeon to the Académie des Sciences, show that among 6,554 persons inoculated the mortality from yellow fever is 1 per 1,000; among those not inoculated, 1 per 100.

MEDICAL MEN AND THE PRESS.—A recent decision in the French courts shows that in France, at any rate, a somewhat stricter check is placed on journalistic indiscretions when medical men, or their practice, is impugned than obtains here. The *Echo de l'Est*, having announced that a certain person had succumbed to the effects of an operation performed by Dr. Bernard, of Thiaucourt, this gentleman brought an action for libel. The Court of First Instance called upon the writer of the incriminated paragraph to furnish proofs in support of his allegation, but, on appeal, this decision was reversed and the journal was ordered to pay £400 damages, on the ground that the subject matter "was based on a fact of an essentially private nature, altogether outside public discussion, and not amenable to journalistic criticism." The proprietors of the journal will doubtless show a little more caution in future in receiving and publishing items of news reflecting on the reputation of medical men.—*Medical Press.*

JERSEY CITY HOSPITAL.—Six physicians on the visiting staff of the Jersey City Hospital have handed in their resignation to the Police Board of Jersey City, the cause of this action being the interference of the latter Board in increasing the staff by the appointment of eight additional physicians and surgeons. This leaves only two members of the old Medical Board, Dr. Reeve and T. R. Varick.

APPOINTMENT OF HOSPITAL PHYSICIANS IN CHICAGO.—The Board of County Commissioners has recently removed the appointment of the attending staff of the hospital from the domain of politics. It has voted the present staff shall remain during good behavior, and that any vacancies in its membership shall be elected by an Advisory Board of five medical men, whom it has appointed. In case of a vacancy, the staff is to nominate three persons, from whom the Advisory Board is to elect one. The Advisory Board, as at present constituted, has a representative from each of three regular medical colleges.—*Medical News.*

THE PRINCE OF WALES AND THE TYPHOID FEVER.—Sir William Gull spoke recently of his disbelief in drugs, and referring to the share which he bore of the responsibility of conducting the treatment of the Prince of Wales' attack of typhoid fever, stated that during the whole illness his Royal Highness did not take four doses of medicine. To which a country practitioner replies, in *The Lancet*, "But what if the Prince's illness had been rheumatic fever or malarial fever caught in India (supposing his Indian tour to have taken place), would Sir William still have withheld all treatment by drugs—salicylates in the one case, quinine in the other? I will do him the justice to say I do not believe he would. But is it a fact that the treatment of the Prince consisted entirely in guarding him from interference with the powers of nature, and in keeping him in a warm bed? Was not alcohol freely administered? I do not know; but this I do know, that Sir William regards a full dose of alcohol, two ounces or even four ounces of brandy if necessary, at bed-time, as the best sedative for the nocturnal restlessness accompanied by delirium which oc-

curs in typhoid; and I would ask what is alcohol administered in this way but a drug?"

INCREASED MORTALITY IN NEW YORK.—During the three months ending March 31, 1887, there were 35 deaths from small-pox, 572 deaths from measles, against an average of 219 deaths during the same period in the previous five years. Of diphtheria there were 559 deaths, against an average of 379 in the same period; of croup 313 deaths, the former average being 232; 141 deaths from scarlatina, against 134 in the same period last year; 62 cases of typhoid, against an average of 52 cases for the previous five years, and 592 of bronchitis, against an average of 520. All these point to an increasing proportion of mortality from the most destructive ailments. The deaths of children under one year and those between one and five years are as follows:

	1887.	Average for five years.
Deaths under one year.....	2,088	1,904
Deaths between one and five years ..	4,098	3,611

Increase in deaths under five years nearly ten per cent. —C. F. WINGATE, in *Morning Journal.*

A NEW SWORD-HANDLE.—Professor Braune, of Leipzig, after a thorough investigation of the mechanism of the hand, has constructed a new sword-handle on anatomical principles which exactly fits the hand, and can be held with absolute security. It is expected that this improved sword-handle will be found very useful, especially by cavalry.

THE DOCTOR'S INCOME.—Continuing the discussion upon this subject Dr. Paget Thurston says that the trouble is not in want of patients, but in the low rates of fees. We can quite believe this, for Dr. Thurston says that in England ten per cent. of patients pay 5 shillings ($1.25), ten per cent. pay 60 cents to $1.25, while eighty per cent. pay such fees as no doctor or educated gentleman can possibly live on, the average for union, club, and dispensary patients being 10 to 15 cents.

EXHIBITION OF SURGICAL APPARATUS.—The Surgical Section of the International Congress of Science and Industry, which is to be held in Brussels next year, has given notice that instruments and apparatus of the following descriptions will be specially acceptable: (1) Apparatus for the treatment of spinal curvature; (2) materials for dressings; (3) gynecological instruments; (4) instruments for diseases of the urinary tract; (5) instruments for the treatment of glandular enlargements in the pharynx; (6) laryngological apparatus; (7) apparatus and dressings for antiseptic operations on the eye; (8) apparatus for the measurement of the acuteness of hearing.

BACTERIOLOGICAL LABORATORIES IN SIBERIA AND RUSSIA.—The Medical Society of Irkutsk, the capital of Eastern Siberia, will soon have a bacteriological station in this city of forty thousand inhabitants. The Kharkov Medical Society has received from the Kürsk Government Assembly 1,500 roubles to establish a bacteriological laboratory in Kharkov, and will receive 700 roubles yearly to support the establishment.

A MENTAL HEALING CONVENTION was held in Boston recently, when the claims and purposes of "Christian Science" were set forth. The chief orator of the occasion was the Rev. Cyrus A. Bartol, who, according to report, spoke with beautiful and well-chosen vagueness of the general progression from the grosser to the finer, from allopathy through homœopathy to the mind cure, concluding with the old fatalistic doctrine that a man could not die until his object in life was accomplished.

ENGLISH AND GERMAN THROAT-DOCTORS.—German laryngologists will be pleased to read the following from the London correspondent of the New York *Times*, who says: "I met Dr. Morell Mackenzie, who is the medical hero of the hour, shortly after his return from Berlin with his blushing honors thick upon him. There is a touch of the college professor about him and a gleam of geniality not unlike that of Oliver Wendell Holmes. The impression he made in Berlin by his cool and sensible view of the real ailment of the Crown Prince's throat, and the radical error that he pointed out in the German opinion of the case, that the disease was not a cancer, have been received here almost as a national compliment to English medical skill."

WOMEN AS DENTISTS.—In the Pennsylvania Dental College there are nine women enrolled this term as students. In the Philadelphia Dental College twenty-six havbeen graduated in the past, and in the present class there are seven enrolled and two or three others attending occasionally. The Baltimore College graduated three women and then refused further admission, nor will they to-day admit women as students.

CHICAGO HAS NO AMBULANCES, according to the *Chicago Mail*, and recently a gentleman, taken suddenly ill, was taken home in an undertaker's coach, that being the best substitute for an ambulance at hand.

AN EASY METHOD OF PREVENTING SEA-SICKNESS.—Professor William James writes to the *Boston Medical and Surgical Journal*, suggesting that by counter-irritation over the mastoid processes, sea-sickness may be prevented. He was led to this idea by his experiments with deaf-mutes, whom he found to be singularly exempt from sea-sickness. In his own case, Professor James thinks that he prevented an attack by simply using friction over the mastoid processes.

Obituary.

WOOLSEY JOHNSON, M.D.,

NEW YORK.

HEALTH COMMISSIONER WOOLSEY JOHNSON, M.D., died of Bright's disease at the New York Hospital, on June 21st, after a protracted illness. Since the death of his wife, two years ago, Dr. Johnson became much prostrated in health, but until within a few months manfully attended to his duties as Health Commissioner. For many years he had been attending physician to the New York Hospital. He was also a surgeon of the Eye and Ear Infirmary, and was a member of the County Medical Society, the Academy of Medicine, the Laryngological Society, and the Physicians' Aid Association. He was graduated at the College of Physicians and Surgeons in 1863. He was also a graduate of Princeton College. His age was forty-five. He became Health Commissioner in 1881, and was holding over until the appointment of his successor.

Reports of Societies.

AMERICAN ORTHOPEDIC ASSOCIATION.

First Annual Meeting, held in New York, June 15 and 16, 1887.

WEDNESDAY, JUNE 15TH—FIRST DAY.

THE Association met at the New York Academy of Medicine, and DR. V. P. GIBNEY, of New York, was elected President, *pro tem.*, and DR. LEWIS HALL SAYRE, of New York, Secretary, *pro tem.*

The constitution and by-laws are so framed that permanent officers are elected on the last day of each annual meeting.

The Secretary acknowledged the receipt of responses from several gentlemen concerning becoming members of the Association, and one resignation, that of Dr. Lewis A. Sayre, of New York, who believed that the Association should be a part of the Section on Surgery of the American Medical Association.

MEMBERS IN ATTENDANCE.

Drs. Thomas G. Morton, of Philadelphia; Newton M. Shaffer, John F. Ridlon, Charles F. Stillman, of New York; A. Sydney Roberts, of Philadelphia; George B. Packard, of Hartford, Conn.; Dillon Brown and H. Ling Taylor, of New York; John C. Schapps, of Brooklyn; Henry Hodgen, of St. Louis; A. B. Judson, Samuel Ketch, C. W. Stimson, Henry W. Berg, George S. Knickerbocker, and V. P. Gibney, of New York; E. H. Bradford, of Boston; Lewis Hall Sayre, W. B. DeGarmo, and E. Develin, of New York.

CONGENITAL OCCLUSION AND DILATATION OF LYMPH-CHANNELS.

DR. GEORGE B. PACKARD, of Hartford, Conn., reported a case of the above affection occurring in a child, five years of age, and involving the right lower extremity. There was no evidence of a syphilitic history. The mother was the subject of phthisis, and although the father was healthy, there was phthisis in his family. Whooping-cough was the only disease the child had had. It could walk well at the age of three years. But the difference in size between the two limbs was very apparent, and the diseased one was three-fourths of an inch the longer. The hypertrophy involved all the tissues of the limb, and partially the same side of the body. The joints and skin were apparently normal. There was some enlargement of the inguinal glands. One month ago the affected limb was three inches longer than the other, and there had been a corresponding development in size. There had never been any inflammatory condition of the skin. Dr. Gibney, of New York, saw the case in consultation; corroborated the diagnosis of congenital occlusion with dilatation of lymph-channels, and advised amputation, which was done three weeks ago, and fourteen inches removed. On examination the blood-vessels were found to be normal, the lymph-vessels enlarged, and three or four times the natural size; also the bones, the muscles, and the cellular tissue hypertrophied.

The points of interest were: (1) The increased length of the bones, and (2) the comparatively healthy condition of the skin.

DR. H. LING TAYLOR, of New York, referred to a case which he thought might possibly belong to this class. The patient was a Swedish girl, twenty years of age, whom he saw first about two years ago. The enlargement of the limb was chiefly between the ankle and knee, and the skin did not seem to be involved. The thigh and the side of the body were somewhat larger than they should be.

DR. T. G. MORTON, of Philadelphia, had seen one case in which there was marked increase in the size of the limb, and he

STRETCHED THE SCIATIC NERVE THOROUGHLY,

just as it emerges from the pelvis, with the result of so affecting nutrition as to diminish the size very much. He thought that this procedure might be adopted before resorting to amputation. The first cases in which he operated in this manner were two of *elephantiasis*, several years ago. In one case he removed an inch of the sciatic nerve, and the limb diminished in size one-half, and the skin became perfectly soft. The patient died of phthisis. In the second case he divided the nerve, but would not do it in other cases, but would stretch it by preference.

DR. N. M. SHAFFER, of New York, had seen unilateral difference in the growth of bones, especially with regard to the tibia and radius, and he had often wondered as to which was the normal side. He would suggest the possibility of central origin.

DR. HENRY W. BERG, of New York, said that enlargement of the lymphatic glands in the abdomen might give rise to closure of the lymphatic ducts and thus produce

HYPERTROPHY OF THE RIGHT LEG.

But any interference higher up would probably give rise to hypertrophy on both sides. He believed it to be fair to presume that an adenitis could close the ducts sufficiently to produce a condition analogous to that described by Dr. Packard.

DR. T. G. MORTON, of Philadelphia, exhibited

AN INSTRUMENT FOR TREATMENT OF CLUB-FOOT

in cases which do not yield to manipulation, adjustment of light apparatus, and, further on, the division of tendons and fasciæ. After the division of tendons and fasciæ the question of correcting the deformity was often a very difficult one to meet, and his apparatus was designed to give assistance. It consisted of a block of wood upon which were arranged pads, bars, and screws, by means of which the tarsus could be forced into position while the patient was under the influence of ether.

He never uses it, however, where

EXCISION OF THE CUBOID

can be practised. He believes that excision of the cuboid gives, in these old cases of rigid tarsus, better results than can be obtained by any other method of treatment.

DR. J. F. RIDLON, of New York, asked if Dr. Morton had found the smaller of his instruments, for instance, sufficiently powerful to overcome the resistance offered by the internal lateral ligament, when it is shorter and stronger than normal, as it is frequently, without division of the bands.

DR. MORTON said that he used the apparatus whenever he was unable to rectify the deformity by manipulation, as, for example, some of the worst cases were those in which proper manipulation had not been practised after an operation. He would divide everything in such cases that offered resistance, then place the foot in the apparatus and force it into position, and do the whole at one operation. The dressing consisted of a tin splint, carefully padded, in which the foot was allowed to remain undisturbed, and he had not seen any untoward symptoms attend the method of treatment.

DR. SHAFFER, of New York, said that some years ago he felt very much as Dr. Morton had expressed himself concerning the inveterate character of a certain number of cases of club-foot, where the foot is tender and the tissues sensitive, etc. In the majority of these cases, however, where most surgeons would operate at once, he had been able to effect complete

CURE BY MEANS OF TRACTION.

Not that every case could be cured by traction, but that many which have been condemned to osteotomy or tarsot-

omy, he had seen yield to it. What he would claim for traction is that the loss of time in treatment is compensated for by the *symmetrical feet* obtained as the result. He was ready to perform tenotomy or osteotomy when antero-posterior and lateral traction failed.

Dr. Morton would not use his forcing instruments in children under six or seven years of age. He referred more especially to the use of the instrument in young subjects, as an aid to the hand. In the adult subject, with a dense, unyielding foot, he had regarded it as absolutely impossible to give any benefit without the use of force, and by means of his large apparatus he had been able to materially shorten the duration of treatment.

Dr. Lewis Hall Sayre, of New York, exhibited a patient on whom he had divided the tendo-Achillis and the plantar fascia in

A CASE WHICH HAD RESISTED MECHANICAL TREATMENT.

The case was one of talipes following infantile paralysis, and the operation was performed two weeks ago. The dressings were removed, and the foot was found in excellent position.

Dr. Ketch, of New York, while he recognized the good result obtained by operative treatment, entered his protest against the case being reported as one in which mechanical treatment had failed; for, one year ago he applied Shaffer's extension and traction shoe, with tenotomy reserved as a further measure if necessary; saw the patient twice only, and had not seen him since. Practically he had found that treatment by traction could not be trusted to parents, and he thought it unfair to bring the case forward as one illustrating the inefficiency of mechanical treatment. He was quite confident that the heel could have been brought down without tenotomy.

Dr. Ridlon asked Dr. Sayre if he was satisfied with the result of bringing the flexion to a right angle.

Dr. Sayre said he was satisfied with the result thus far obtained, but that treatment must be continued to carry flexion as far beyond a right angle as might be, and then watch the case to see that the deformity does not return.

Dr. H. Ling Taylor suggested the appointment of a committee to investigate and report on the subject of "point pressure" and division of contractured tissues.

Dr. A. Sydney Roberts, of Philadelphia, thought that more permanent results could be obtained by extension and traction than by division of tendons and fasciæ. He cited a case in which positive relapse occurred after an apparent cure by operative procedure.

Dr. C. F. Stillman, of New York, believed it to be important in almost every case to put the patient through a course of

PREPARATORY TREATMENT,

consisting of rest in bed, perhaps, for some weeks, with the application of thick poultices, which would greatly increase the pliability of the tissues and facilitate operative measures and after-treatment. He regarded *after-treatment* as the most important of all, for upon its thorough application depended the completeness of the cure. To accomplish the last satisfactorily, some kind of mechanical appliance was almost always necessary.

The discussion was continued by Drs. Morton, of Philadelphia, and Stillman, Shaffer, and Berg, of New York.

Dr. V. P. Gibney, of New York, presented two patients illustrating

OSTITIS OF THE SHOULDER,

attended by false anchylosis. In the first case the arm in 1881 was one inch smaller than the well limb, and in 1884 one inch and a half. There still remains some atrophy, but during the past year the arm had increased in size and was quite useful.

In the second case there was marked atrophic changes, but improvement had taken place after *brisement forcé*, which also had been practised more than once in the first case.

Dr. Ridlon, of New York, cited a case which led him to the belief that recovery may take place in some of these cases under the thorough use of mercury.

Dr. H. Ling Taylor, of New York, reported a case of

POTT'S DISEASE, WITH AN UNUSUAL DEFORMITY,

mainly lateral, from the beginning, with two knuckles in the spine, one at the eleventh dorsal, and the other at the third or fourth lumbar vertebræ. The points of interest in the case were the extreme lateral distortion, with angular curvature at two points, and the prompt rectification by means of the antero-posterior splint.

Dr. Ridlon, of New York, had had a similar case, which he treated successfully by means of the antero-posterior support combined with the plaster of Paris.

Dr. Ketch, of New York, thought that lateral deviation was not uncommon, and in the early stages of the disease he thought that it might be expected almost always, especially when the lower part of the spine was affected.

Dr. Shaffer, of New York, had regarded extreme lateral deviation as one of the best guides in diagnosis of Pott's disease low down.

Dr. Stillman, of New York, mentioned a case that confirmed Dr. Shaffer's statement.

Dr. Henry Hodgen, of St. Louis, referred to a case which illustrated the principle in Dr. Taylor's case, and it was the only one which he had seen where there was any recession of the deformity.

Dr. A. B. Judson, of New York, exhibited an

ISCHIATIC CRUTCH,

the description and illustration of which appears in full in The Medical Record, page 721.

Dr. T. G. Morton, of Philadelphia, then made some remarks with reference to

ANCHYLOSIS OF THE KNEE,

whether osseous or where there was a slight amount of motion. The point in treatment to which he directed special attention was *suturing the femur and the tibia* with the largest catgut, after removing the wedge-shaped portion of bone corresponding to the angle of the deformity. In three cases he had secured immediate union of the soft parts and of the bones without separation or suppuration. The suturing obviates the use of any lateral support. The safest dressing is a plaster-of-Paris posterior splint, fairly moulded to the limb, and a retentive bandage.

The communication was discussed by Drs. Shaffer, Ketch, and Stillman, of New York.

The Association was entertained at the Casino in the evening.

Thursday, June 16th—Second Day.

The first order of business was the discussion on Dr. Judson's *ischiatic crutch*, which was participated in by Drs. Gibney and Stillman, of New York, and Dr. Roberts, of Philadelphia, all speaking in commendation of the instrument.

Dr. A. Sydney Roberts, of Philadelphia, exhibited

A PLANTAR SPRING FOR FLAT FOOT.

It was a modification of the old Knight spring, the modification consisting in slitting the edges of the inner curve. The spring is designed to counteract the inward rotation of the inner arch of the foot in walking. The condition to be overcome in these cases is the breaking down of the inner arch of the foot with rotation.

Dr. Ketch, of New York, spoke of the advantages of the modified spring presented by Dr. Roberts, as he had used it in a number of cases.

Dr. Shaffer, of New York, spoke of *shortening of the gastrocnemius muscle* as an etiological factor in flat foot.

Dr. L. H. Sayre, of New York, thought that shortening of the gastrocnemius might be an important factor.

Dr. Ketch was unable to understand how such shortening could beget flat foot.

The discussion was continued by Drs. A. B. Judson, of New York, Roberts, of Philadelphia, Shaffer, Stillman, and Gibney, of New York.

Dr. Bradford, of Boston, in behalf of Dr. Lovett, of Boston, presented a specimen, with its history, from

A CASE OF HIP DISEASE, IN WHICH IT WAS SUPPOSED THAT A VERY GOOD RECOVERY HAD TAKEN PLACE.

The patient died of tetanus. There were found caries of the acetabulum, with a sequestrum pointing inward. The head of the femur was solidified, and enabled the boy to walk with a stiff joint. On the top of the femur was a small loose sequestrum.

Dr. Lewis Hall Sayre, of New York, presented a somewhat similar specimen removed by excision. These specimens gave rise to a protracted discussion on the question of excision of the hip.

The President, in behalf of Dr. Ap Morgan Vance, of Louisville, Ky., presented what looked very much like the

"CONNECTING LINK."

It was a tail-like body removed from the side of the coccyx of a mulatto girl three years old. The mother was an octoroon seventeen years of age, and the father three-fourths white and eighteen years old. There was no power of movement in this caudal appendage fully four inches long, nor bone nor muscle.

Dr. John F. Ridlon, of New York, gave the notes of two cases of

POTT'S DISEASE THAT ILLUSTRATED THE DIFFICULTY OF DIAGNOSIS IN CHILDREN.

In very young children, caries of the vertebræ up to the third or fourth dorsal may give rise to symptoms referable only to the neck.

The communication was discussed by Dr. Ketch, of New York.

Dr. Henry Hodgen, of St. Louis, then opened the discussion on

THE TREATMENT OF PSOAS ABSCESS FROM CARIES OF THE SPINE.

The treatment which he, in conjunction with Dr. Mudd, of St. Louis, had adopted in five cases with good results was early and repeated aspiration. He did not claim that it was an absolute cure for all cases, but that they might be arrested after from two to five aspirations. He would not repeat aspiration more than six or seven times, but would use the needle as soon as he could diagnosticate the presence of pus.

Dr. Shaffer, of New York, had been unable to empty these abscesses with the aspirator. He would prefer, could he direct, to have them all open into the rectum. He had known several to open into the bladder with good result.

Dr. Ridlon, of New York, had seen several abscesses connected with caries of the lumbar vertebræ disappear spontaneously.

Dr. Ketch, of New York, spoke of the advantages of the non-interference plan of management.

Dr. Hodgen disbelieved entirely in the expectant method of treatment.

Dr. H. Ling Taylor, of New York, exhibited the

ANTERO-POSTERIOR SPINAL SUPPORT,

and pointed out the modifications which it had received somewhat recently.

He also exhibited an

ABDUCTION CRUTCH

designed to overcome adduction, either in hip disease or in old cases of dislocation.

Dr. Ketch, of New York, exhibited

A DEVICE FOR OVERCOMING INTERMITTENT TRACTION IN HIP-JOINT APPARATUS

due to bagging of the straps in the old hip-splint.

Dr. Charles F. Stillman, of New York, exhibited an apparatus for the treatment of

ROUND SHOULDERS

in which was illustrated the action of the new V-lever principle.

Dr. Dillon Brown, of New York, presented a little patient upon whose tibia he had performed

OSTEOCLASIS.

It was one of fifteen cases in which he had operated successfully, with return of the deformity in only one case.

Dr. Bradford, of Boston, reported five cases in which he had performed

KOENIG'S OPERATION OF LUMBAR AND ILIAC INCISION FOR ILIAC ABSCESS

with good results. One was a case of double iliac abscess.

Dr. Shaffer, of New York, had seen iliac abscess become incapsulated in many cases and then give rise to no inconvenience whatever.

Dr. Bradford thought that the inability to say whether or no the abscess contained sequestræ rendered the expectant plan of treatment especially dangerous.

Dr. Bradford also reported a case of

TORTICOLLIS FROM DEFECTIVE ATTACHMENT OF THE MUSCLES OF THE EYE.

In order to get binocular vision it was necessary for the boy to put his head in the position of torticollis.

Dr. S. Knickerbocker, of New York, described an apparatus which he had devised for preventing

ADDUCTION IN HIP DISEASE

while the case was under treatment.

The Society then went into executive session. The following officers were elected for the ensuing year:

President—Newton M. Shaffer, of New York.

Vice Presidents—E. H. Bradford, of Boston, and A. Sydney Roberts, of Philadelphia.

Secretary and Treasurer—Lewis Hall Sayre, of New York.

Corresponding Secretary—S. Ketch, of New York.

The Committee on Organization, Drs. Shaffer, Gibney, and Sayre, entertained the Association and guests with a banquet at the St. Nicholas Club in the evening.

Perforation of the Bladder.—Drs. Benham and Greig Smith record in the *Glasgow Medical Journal* the case of an imbecile who pushed the whalebone of an umbrella up his urethra and into his bladder. Two years afterward, during an autopsy, the man having died of Bright's disease, the whalebone was found to have perforated the bladder and passed into the peritoneal cavity, one end still, however, remaining in the bladder, and on this extremity a phosphatic calculus. During life the patient never complained of any vesical or abdominal trouble.—*Medical Press.*

Warm Ether as an Anæsthetic.—Dr. M. W. Hobbes advocates, in the Cincinnati *Lancet-Clinic*, the advantage of warming ether previous to its administration in the production of anæsthesia. He and Dr. Taylor have tried the method in upward of thirty cases, and he writes that the patients not only came under the influence of the drug more readily, but they also recovered more rapidly and pleasantly from the anæsthesia than patients generally do who have been brought under its influence in the ordinary way of administering ether cold.

New Instruments.

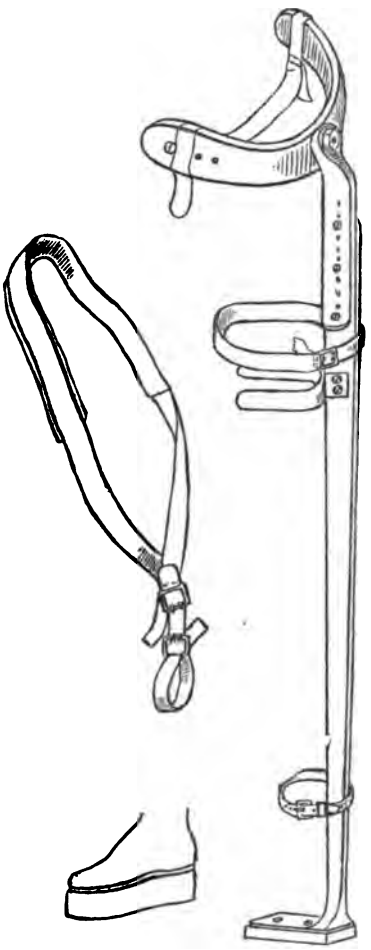
THE ISCHIATIC CRUTCH.

By A. B. JUDSON, M.D.,

NEW YORK.

THIS apparatus is for use in the treatment of deformities and diseases of the joints of the lower extremities. By converting the affected limb into a pendent member it removes from it the weight of the body in standing and walking. This is not a new idea in surgery,[1] but the importance of the subject leads me to describe in detail an instrument which an experience of two years has shown to be easily adjusted, conveniently worn, and, with the aid of a high sole on the well foot, entirely competent to keep the weight of the body from falling on the affected limb when the patient is up and active.

The frequent occurrence of hip disease and white swelling of the knee, and the rarity of a similar condition in the shoulder and elbow, would support the theory of the traumatic etiology of joint-diseases, if it were not for the fact that the primary lesion in articular osteitis is a central focus which could hardly be produced by traumatism. It is not improbable, therefore, that the comparative exemption of the upper extremity from destructive joint-disease is to be explained by the supposition that a focus in the cancellous tissue may undergo spontaneous resolution when exempt from disturbance in a pendent member, and may be expected to become progressive when exposed to the violence which habitually assaults the bony tissue of the lower extremity.



In the orthopædic institutions of this city, as shown in their annual reports, cases of disease of the larger joints were treated in 1885 in the following numbers: Hip, 564; knee, 258; shoulder, 9; elbow, 10. It may be said that cases involving the shoulder and elbow are more likely to seek relief in general rather than in orthopædic charities. Notwithstanding this, and perhaps other reasons, for discrediting the apparent force of these figures, it is believed that they represent a fact of practical importance, from which the inference is fairly drawn that in certain cases of osteitis of the hip and knee the persistent use of the ischiatic crutch, from the early incipiency of the disease, would lead to recovery before the appearance of the severer symptoms. Indeed, in those cases of incipient hip disease which recover with unimpaired symmetry and function under treatment by the hip-splint, it is impossible to say whether the good result is due to the use of the splint as an apparatus for applying traction or to its use as a crutch, for the hip-splint, with its rack and pinion and adhesive plaster, is as truly an ischiatic crutch as the simpler apparatus here described, provided its upright and pelvic bands are sufficiently inflexible to keep the weight of the patient from bringing his heel to the ground.

The ischiatic crutch is represented in the figure, which requires but a few words of description. The perineal strap, which is a bit of Allien's webbing covered with blanketing and canton flannel, has a loop at each end, which passes over the screw by which it is kept in place. By loosening the nut the pelvic band, which has the outline of a semi-circular arch on low piers, may be adjusted at the desired angle with the upright, where it should be fixed by tightening the nut. The head of the screw-bolt is counter-sunk, and the screw-holes, of which there are three at each end of the band for the proper adjustment of the perineal strap, are "upset" by a few blows with a riveting hammer on the inner surface of the steel band before it is covered with hard rubber. The U-shaped steel-piece and the webbing retentive strap find their proper place a short distance above the knee, while the leather strap is loosely buckled above the ankle. The patient's head and the arm of the affected side pass through the large loop of the shoulder-strap, while the upright passes through the small loop which comes up on the inner side of the pelvic band. This part of the apparatus is to be so adjusted that when the splint is raised in walking its weight is felt on the opposite shoulder. The upright is shod with sole-leather. Its length is readily altered, and the perineal strap should be of such a length as to make the pelvic band fall on a level midway between the anterior iliac spine and the great trochanter.

In a case presented before the Surgical Section of the New York Academy of Medicine on May 9, 1887, the patient was a boy, ten years of age, in whom the left knee had been the seat of chronic osteitis for a year and a half. Since the application of the crutch in December, 1886, the disease has been quiescent, and probably progressing toward recovery. The boy is 4 feet 2 inches in height, and weighs 51 pounds without the splint. The apparatus complete weighs $2\frac{3}{4}$ pounds. The pelvic band is 6 inches in diameter, and is made of a steel bar $\frac{3}{16} \times \frac{1}{8} \times 12$ inches, covered with hard rubber. The perineal strap is 9 inches long. The bars composing the upright are $1 \times \frac{3}{16}$ inch. The upright as worn is $28\frac{1}{2}$ inches in length, and the distance from the pelvic band to the knee-piece is 9 inches. The high sole is $2\frac{1}{2}$ inches thick. The cost of the steel, finished with great care and electro-plated, and the hard-rubber work was $14.25. This expense could be materially reduced at the sacrifice of elegance, without impairing the efficiency of the apparatus, and, with less nicety in construction and at the sacrifice of some convenience on the part of both the surgeon and the patient, the cost could be reduced to but little more than a nominal sum. The boy has attended school without interruption since its application, and from the first has walked, without a complaint and with evident convenience, from his home to the out-patient department of the hospital, a distance of one and three-fourths of a mile. He removes the crutch at night.

I first used this form of apparatus in convalescing cases of hip disease, when traction and fixation were no longer required. In the treatment of white swelling of the knee it has conveniently taken the place of Thomas' splint, and is to be worn only when the patient is out of bed, fixation of the joint being maintained by an independent splint which is constantly worn. In both of these classes of cases the results have been entirely satisfactory. The ischiatic crutch would doubtless be useful in the treatment of disease of the ankle-joint and ununited fracture of the shaft of the femur and, probably, in fracture of the femoral neck, as well as in cases of osteitis of the lower extremities not directly associated with a joint. In cases of resistant club-foot the removal of

[1] See a paper on The Question of Axillary or Ischiatic Support in the Treatment of Joint-diseases of the Lower Extremity, MEDICAL RECORD, pp. 1–3, July 2, 1882.

the weight of the body from the affected foot by the use of this apparatus, during certain stages of the treatment, would obviously facilitate reduction.

42 East Twenty-first Street.

Army and Navy News.

Official List of Changes in the Stations and Duties of Officers serving in the Medical Department, United States Army, from June 12 to June 18, 1887.

Baxter, J. H., Colonel and Chief Medical Purveyor. To proceed to New York City for the purpose of inspecting the medical purveying depot at that place. S. O. 133, A. G. O., June 10, 1887.

Alden, Charles H., Major and Surgeon. Par. 15, S. O. 52, A. G. O., March 5, 1887, is so amended by Par. 9, S. O. 133, A. G. O., June 10, 1887, as to direct that he be relieved from duty in Department of Dakota about June 20, 1887, and he is granted leave of absence from the date when so relieved to include August 27, 1887.

Fryer, B. E., Major and Surgeon. Found incapacitated for active service by an Army Retiring Board, and granted leave of absence until further orders on account of disability. S. O. 133, A. G. O., June 10, 1887.

Hall, John D., Captain and Assistant Surgeon. Leave of absence extended one month. S. O. 136, A. G. O., June 14, 1887.

Borden, W. C., First Lieutenant and Assistant Surgeon. Granted leave of absence for one month. S. O. 138, A. G. O., June 16, 1887.

Official List of Changes in the Medical Corps of the United States Navy for the week ending June 18, 1887.

Walton, Thomas C., Surgeon. Ordered, June 15th, for examination preliminary to promotion as Medical Inspector.

Price, A. F., Surgeon. Detached from special duty at Annapolis, Md., to proceed home and await orders.

Flint, James M., Surgeon. Detached from the Albatross, and ordered to the Smithsonian Institution.

Willson, W. G. G., Passed Assistant Surgeon. Ordered to the Receiving-ship Independence, Mare Island, Cal.

Medical Items.

Contagious Diseases—Weekly Statement.—Report of cases and deaths from contagious diseases reported to the Sanitary Bureau, Health Department, for the week ending June 18, 1887:

	Cases.	Deaths.
Typhus fever	0	0
Typhoid fever	5	5
Scarlet fever	60	15
Cerebro-spinal meningitis	7	8
Measles	39	4
Diphtheria	116	35
Small-pox	4	2
Yellow fever	0	0

Treatment of Œdema of Lungs.—Nothnagel, in a clinic published in the *Wiener Med. Zeitung*, advises as follows: First, to stimulate the heart. If the patient be conscious and can swallow he gives the stimulants which act most quickly, viz., the champagne wines. Champagne is the most rapid and the surest in its excitant action of all the wines. Quincke years ago showed that alcohol is more quickly absorbed when it is introduced into the stomach along with carbonic acid. Or he gives strong black coffee with, as a rule, some brandy, rum, or arrack; or else a few drops of sulphuric ether. If the patient cannot swallow he resorts to hypodermic injection, preferring camphor to sulphuric ether. In giving large doses of ether you are apt to lose its primary exciting action in its stupefying effect; in proof of this he gives the result of three hundred and sixty-six injections of ether in rabbits, which as completely narcotized them as if the ether had been inspired. He injects one centigramme of camphor dissolved in oil (one in ten) and repeats this two, four, or five times in quick succession. Second, to limit the transudations of fluid from the vessels into the lung tissue and bronchi. For this purpose, Nothnagel only knows of one treatment, the one originated by Traube. This consists in administering five centigrammes of acetate of lead as a powder every quarter or half hour for four or five doses. As the symptoms abate it should be given every one or two hours. The next best thing is a large blister reaching from one nipple to the other, and from the manubrium to the ziphoid cartilage, the irritation of the skin thus produced probably causing contraction of the lung-vessels.

Case of Poisoning by Artemidis Nephrosis.—Dr. William J. Wonder, of Little Muddy, Dak. Ter., reports the following case of supposed poisoning by *artemidis:* The query might be raised if the child were not simply suffering from eclampsia, the result of gastric irritation. J. R——, seven years of age, on October 17, 1886, was seen by his mother to be eating some green leaves, which afterward proved to belong to the above-mentioned plant. Three hours afterward I was sent for and found him in convulsions and perfectly unconscious. From the history of the case I thought at once that it was one of vegetable poisoning, and proceeded to administer an enema of castor-oil and an emetic of *human urine*, no other emetic being available in this out-of-the-way place. Both acted in about twenty minutes, and the floor was green with the double evacuations. The child soon regained consciousness, and, although weak, recovered in about three hours under the administration of the following remedy, which I can recommend under similar circumstances:

℞. Aq. menth. pip.,
Syr. simp .....āā f ℥ ss.
Spts. vini. gallici ..... f ℥ ij.
Sig.—Tablespoonful every hour.

I think the prompt use of an emetic, although one so repugnant to the feelings, was really the cause of the child's recovery. If there are any other recorded cases of poisoning by this plant I would be glad to hear of them through the columns of your valued paper.

The Treatment of Compound Fractures by Professor Max Schede, of Hamburg, presents some novel features, according to a correspondent of the *Cincinnati Lancet and Clinic*. The wound or wounds are laid freely open, irrigated thoroughly with corros. sublimat. sol., 1–1,000, all loose splinters of bone removed, fracture reduced, and fixation of the fragments secured by means of a little device of Dr. Hansmann, the first assistant surgeon. It consists of a little metal plate about half an inch wide and as long as is necessary, perforated with holes at short distances. It is laid upon the periosteum, and a screw inserted through one of the holes into the bone on each side of the point of fracture. Two of these little splints are usually employed in a fracture of a large bone, after which the immobility of the limb is secured in the usual way by splints; the wound being left open and treated antiseptically. The metal plate has the advantage over bone sutures in being much more easy and simple in its application as well as removal, and it secures and maintains the approximation and fixation of the fragments just as firmly.

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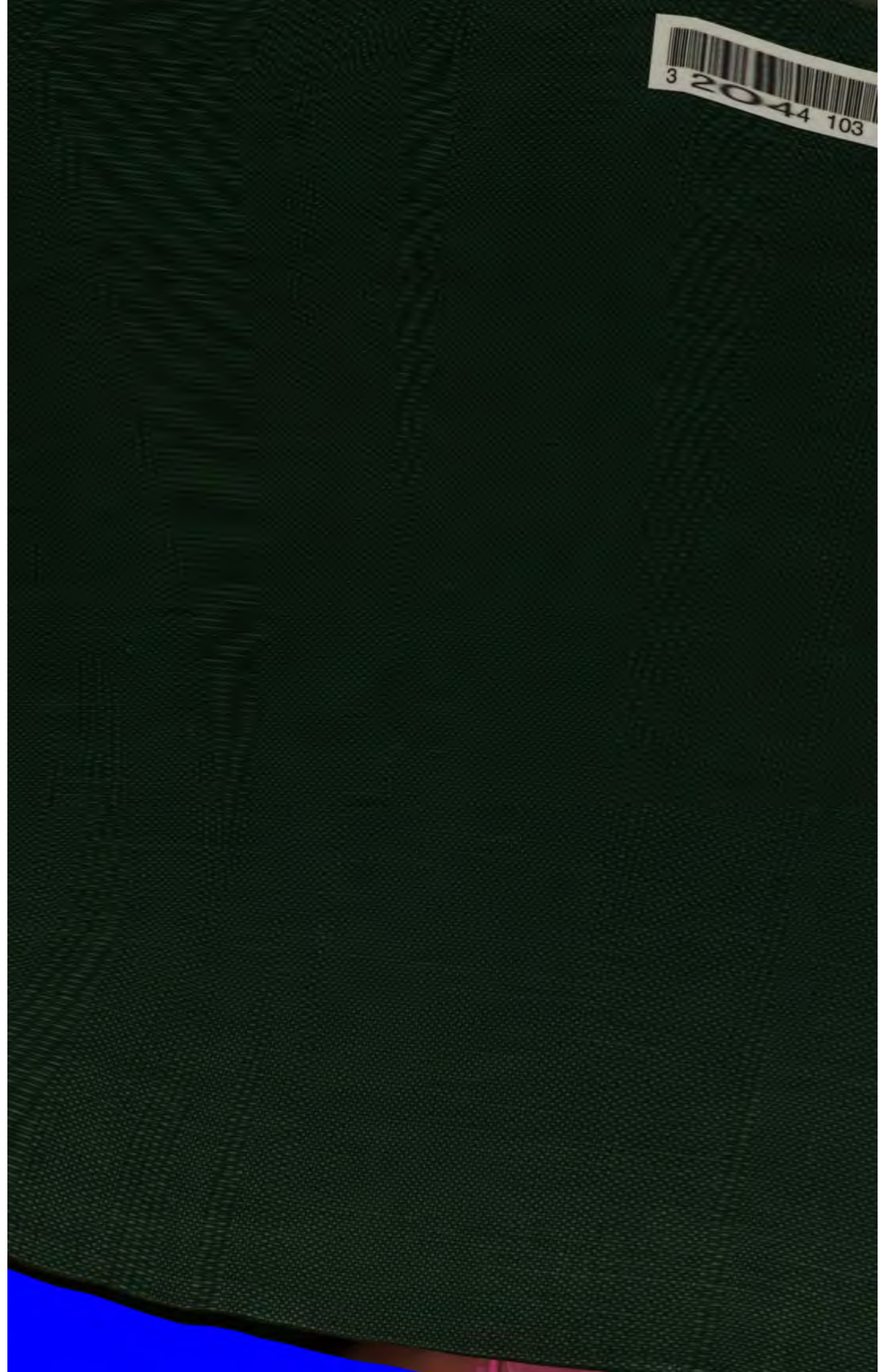
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